REPORT OF THE

SAN FRANCISCO
PUBLIC UTILITIES COMMISSION

FISCAL YEAR
1947-1948

WATER DEPARTMENT

HETCH HETCHY WATER SUPPLY,
POWER AND UTILITIES
ENGINEERING BUREAU

BUREAU OF LIGHT, HEAT AND POWER

SAN FRANCISCO AIRPORT DEPARTMENT

MUNICIPAL RAILWAY

Compiled Under Direction
of the
PUBLIC UTILITIES COMMISSION
by
TOM IRWIN
Director
BUREAU OF PUBLIC SERVICE

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SAN FRANCISCO

REPORT OF

PUBLIC UTILITIES COMMISSION SAN FRANCISCO

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FISCAL YEAR 1947-1948

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COMMISSIONERS

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President

LLOYD S. ACKERMAN
Vice-President

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SAM McKEE

•

J. H. TURNER
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•

FORREST B. GIBBON
Secretary to the Manager

•

R. J. MacDONALD
Secretary to the Commission

CITY AND COUNTY OF SAN FRANCISCO
PUBLIC UTILITIES COMMISSION

April 30, 1949

Honorable Elmer E. Robinson,
Mayor of the City and County of San Francisco,
City Hall,
San Francisco, California.

My dear Mayor:

Pursuant to the provisions of the City Charter, the Public Utilities Commission of the City and County of San Francisco submits herewith its Annual Report for the fiscal year beginning July 1, 1947, and ending June 30, 1948. This is the sixteenth annual report of the Commission.

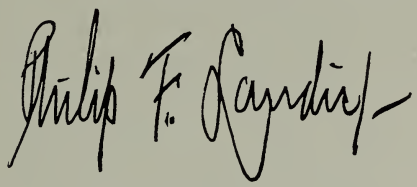
The City Charter bestows on the Public Utilities Commission authority to control and have jurisdiction over the construction, management, maintenance, extension and operation of all public utilities owned, leased or used by the City and County of San Francisco. These utilities are the San Francisco Water Department, the Municipal Railway of San Francisco, the Hetch Hetchy Water Supply, Power and Utilities Engineering Bureau, the San Francisco Airport Department and the Bureau of Light, Heat and Power. There are in addition three service bureaus, namely: the Bureau of Accounts, the Bureau of Personnel and Safety and the Bureau of Public Service and Employee Relations.

Detailed reports on the operations and activities of these several departments and bureaus will be found in succeeding sections.

Principal personnel changes in the Commission during the year were the appointments by you of myself, succeeding Mr. Marshall Dill on January 26, 1948; of Mr. Victor S. Swanson to succeed Mr. Daniel F. Del Carlo on January 19, 1948; and of Mr. Sam McKee to succeed Mr. Washington I. Kohnke on March 15, 1948.

The Commission held 53 meetings during the year, adopted 750 resolutions and awarded 74 contracts for work costing $3,633,057.54. Contract payments approved amounted to $6,206,000.66 and there were accepted as completed 57 contracted projects. During the same period, the Commission leased 10,838.49 acres of Water Department lands, largely for grazing purposes.

Respectfully submitted,



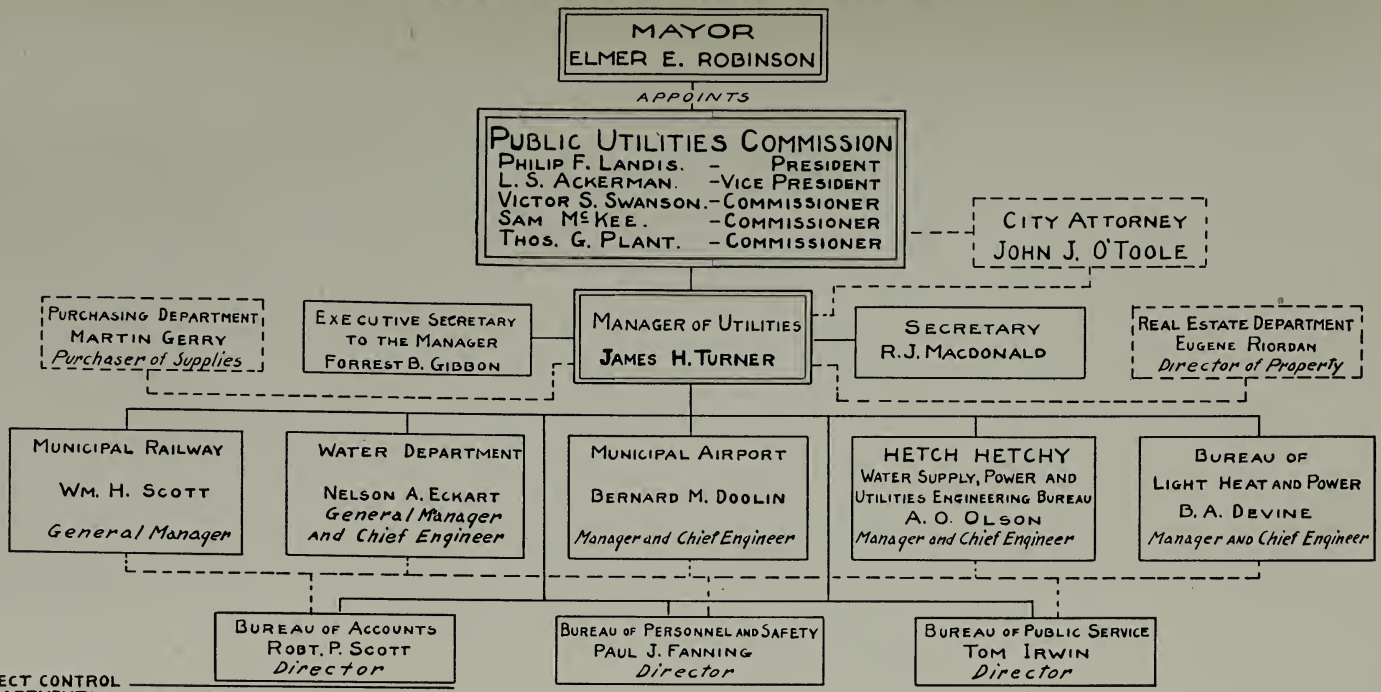
President
Public Utilities Commission

PUBLIC UTILITIES COMMISSION AND OFFICERS

Top row, left to right, Paul J. Fanning, Director Personnel and Safety; Tom Irwin, Director Public Service; R. J. MacDonald, Commission Secretary; Forrest B. Gibbon, Executive Secretary to Manager of Utilities; Center row, Victor S. Swanson, Commissioner; Lloyd S. Ackerman, Vice-President; Philip F. Landis, President; Thomas G. Plant, Commissioner; Sam McKee, Commissioner; Bottom row, R. P. Scott, Director Bureau of Accounts; B. A. Devine, Manager Bureau Light, Heat and Power; W. H. Scott, General Manager Municipal Railway; J. H. Turner, Manager of Utilities; N. A. Eckart, Chief Water Department; A. O. Olson, Chief Hetch Hetchy; B. M. Doolin, Chief Airport Department.

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

ORGANIZATION CHART



CRYSTAL SPRINGS RESERVOIR SHOWING CONCRETE DAM AND INLET STRUCTURE

SAN FRANCISCO WATER DEPARTMENT

N. A. ECKART

General Manager and Chief Engineer

N. A. ECKART
General Manager and Chief Engineer
San Francisco Water Department

There has been a marked increase in the Department's construction activities over the previous year. More than a million and a half dollars worth of contracts were awarded during the period, or approximately twice that of any single year in the past ten. The value of contract work completed during the year exceeded a million dollars. Due to two consecutive seasons of rainfall below normal the local watershed areas produced little runoff. It was necessary to draw the Hetch Hetchy sources during the year to the maximum capacity of the San Joaquin Pipe Line and in addition to draw from the storage reserves in Calaveras and Peninsula reservoirs to the maximum extent. This withdrawal caused Calaveras to reach its lowest stage in thirteen years and also, resulted in lowered water levels in the peninsula reservoirs, which in turn reduces the quantity that can be delivered into the distribution reservoirs inside the city limits. This situation will become increasingly acute during the coming season and will be serious should we experience another dry year this winter. Steps are now being taken to install additional pumping capacity to meet such possibility.

The present available capacity for bringing water into San Francisco from the peninsula reservoirs is even now being taxed on peak days of consumption which occur during periods of high temperature. Any extended interruption of service through one of the five transmission lines during such periods, would seriously cripple San Francisco's water supply.

The $25,000,000 Hetch Hetchy Water Bond Issue was approved in the November, 1947, election, making it possible to carry on work preparatory to the construction of an additional pipe line across the San Joaquin valley and a new line around the end of the bay from Irvington Portal to Crystal Springs reservoir, as well as providing for completion of additional pipes from the peninsula reservoirs.

Water consumption for the entire system during the year ending June 30, 1948, averaged 101.0 million gallons daily, a decrease of 0.9 million gallons daily over the preceding year. Of this total, 81.3 million gallons daily were used in San Francisco and the balance of 19.7 million gallons daily in suburban consumption.

The peak 24-hour demand on the system, occurring on June 22, 1948, was 138.3 million gallons, establishing an all time peak 24-hour water use. This figure is 2.7

million gallons more than the previous all time high of 135.6 million gallons per day established during the preceding fiscal year.

The maximum month's demand in July, 1947, averaged 122.6 million gallons daily, as compared to the previous all time high of 117.0 million gallons daily which occurred during June, 1947.

Water sales for the year amounted to $10,614,577, an increase of $95,226, or 0.91 per cent over the preceding year. This total figure must be reduced by $585,559, the value of water service furnished to various other city departments without charge, making the net revenue sales $10,029,018. Despite an increase in revenue from residential accounts within the city limits of $78,059, the net sales in San Francisco decreased $30,504 to $9,181,721. This drop is due principally to a decrease in commercial and industrial accounts. Suburban sales increased $125,730, making a total suburban sales of $1,432,856 or 14.3 per cent of our total revenue sales.

The number of active consumer accounts increased from 137,594 as of June 30, 1947, to 141,143 as of June 30, 1948, a gain of 3,549.

Deletion from the budget of funds requested for continuation of the Sutro reservoir project, unless restored, will defer at least for another year the completion of this project which is vitally necessary to maintain adequate distribution reservoir capacity for domestic use and fire protection in this rapidly growing district west of Twin Peaks.

The work of replacing the old wooden flume at San Mateo Dam No. 2 with a reinforced concrete structure and pipe line was completed on February 23, 1948, and the wooden flume comprising Section No. 1 of the Stone Dam Aqueduct was replaced by a concrete lined tunnel and a reinforced concrete pipe line, work on this project being completed on March 4, 1948. The completion of these two projects makes it possible to maintain and keep available for consumptive use runoff from the dependent peninsula watershed areas.

The rehabilitation of the Pleasanton Wells supply and Sunol filter beds was undertaken during the year, which together with the Irvington pumping plant, completed in February, 1948, again makes available a supply in excess of 10 m.g.d. from these two sources which can be boosted into the Bay Division pipe lines of the Hetch Hetchy aqueduct.

The section of the 60-inch Sunset Supply Line from Colma to Sunset reservoir was completed on May 12, 1948, except for a short section crossing an arm of Lake Merced. A contract for this remaining section was awarded on June 21, 1948. A contract was awarded for the construction of the Colma to Baden section of the Sunset Supply Line on April 12, 1948. The line, when completed, between Baden and Sunset reservoir, can deliver water from either Crystal Springs or San Andres reservoir to Sunset reservoir within the city.

Sincere appreciation is expressed for the splendid cooperation of the personnel of the Department in maintaining the efficiency of the Department and improving service.

WATER PRODUCTION

General Operations:

The total water used during the year amounted to 37,153 million gallons, of which 36,975 million gallons were used to supply consumers and 178 million gal-

lons were delivered to the Alameda County Water District. This water was supplied from the following sources:

Local production	7,400 million gallons
Hetch Hetchy Supply	22,840 million gallons
Local reserve storage	6,913 million gallons
Total	37,153 million gallons

Delivery from Hetch Hetchy averaged 62.4 million gallons daily, and maximum possible delivery continued throughout the year.

Approximately 99.0 per cent of the Hetch Hetchy delivery was brought across the bay, the remainder being diverted into the Alameda System. The total delivery from Hetch Hetchy since completion of the aqueduct on October 18, 1934, now amounts to 170,051 million gallons, or an average of 34.0 million gallons daily.

The draft on water resources to meet consumption requirements for the year averaged 101.0 million gallons daily, a decrease of 0.9 million gallons daily over the preceding year. Consumption in San Francisco decreased 2.0 million gallons daily and suburban consumption increased 1.1 million gallons daily.

The 24-hour peak consumption for the entire system was 138.3 million gallons and occurred on June 22, and the maximum month's demand on the system, occurring in July, 1947, averaged 122.6 million gallons daily.

All water delivered to San Francisco was, as heretofore, supplied entirely from the San Andres and Crystal Springs reservoirs in San Mateo County. These reservoirs were replenished by the limited local runoff, by water drawn from Calaveras reservoir in Alameda and Santa Clara counties and from underground sources in the Pleasanton and Sunol area, as well as from the Hetch Hetchy system in the Sierra Nevada mountains.

Water deliveries outside San Francisco are designated as suburban consumption. Practically all water deliveries outside the city of San Francisco are made to vendors who take large quantities at the department's transmission mains and distribute the water through their own distribution systems to individual consumers. The department's water is used by practically all cities and towns in San Mateo county and by Palo Alto. The distribution systems in these communities are owned by individual cities, public utilities companies, water districts or private individuals. Relatively small deliveries are also made by the department's transmission mains in the southerly end of Alameda county.

Rainfall, Catchment and Storage:

Rainfall on the peninsula watersheds was approximately 29 per cent below normal, while that at Calaveras was 27 per cent below normal. This low rainfall following a year of even lower rainfall made it necessary to draw down the reservoir levels at Calaveras and Crystal Springs in order to meet consumption demands. On July 1, 1947, Calaveras reservoir was at gauge height 89′ 7¼″, higher than at any other time during the fiscal year. On February 26, 1948, the level dropped to gauge height 32′ 0¾″, and on June 30, 1948, the water level was at gauge height 62′ 2″. Crystal Springs reservoir likewise was highest on July 1, 1947, at gauge height 111′ 6¾″. This is approximately 2′ 8″ below the spillway lip. The water level dropped to gauge height 104′ 4¾″ on October 6, 1947, and rose to gauge height 109′ 5¼″ on January 16, 1948. On June 30, 1948, the water level in Crystal Springs reservoir was at gauge height 106′ 2½″.

The seasonal gain in storage, from a low of 26,575 million gallons on March 11, 1948, to a maximum of 31,334 million gallons on May 8, 1948, amounted to only 4,759 million gallons. Surface storage in city, peninsula and Calaveras reservoirs on June 30, 1948, was 29,706 million gallons as compared to 36,619 million gallons at the end of the preceding year.

The water level in Pilot Well No. 103W in the Pleasanton well field dropped 16 feet from July 1, 1947, to June 30, 1948. Since July 1, 1943, the drop in ground water level for this well has been 53 feet. This drop in water level is the result of the heavy pumping during the war years by the Navy for the Camp Shoemaker Naval activities, and to the fact that the past two years of light rainfall has contributed only a slight replenishment of the underground supply.

The "advance release" for percolation into the Niles Cone decreased during the year by 689 million gallons, making the total advance release to June 30, 1948, 23,381 million gallons. However, in the figure credit has not been taken for 3,548 million gallons of water flowing over the U.S.G.S. gaging station from Laguna Creek for the period September 16, 1943, to June 30, 1948. From September 16, 1943, to September 30, 1946, the water in Laguna Creek was contaminated by the effluent from the Camp Parks sewage plant and was made unfit for domestic use. Of this 3,548 million gallons, 813 million gallons flowed during the fiscal year 1943-44; 1,055 million gallons in 1944-45; 1,202 million gallons during 1945-46; and 478 million gallons from July 1, 1946, to September 30, 1946, and January 1 to June 30, 1947.

Transmission:

Water consumption within the city limits required delivery of a daily average of 81.3 million gallons into the city distribution system. Of this amount an average of 40.2 million gallons daily was delivered through the 60-inch and 44-inch Crystal Springs pipe lines; 25.7 million gallons daily delivered through the San Andres 54-inch pipe; 7.3 million gallons daily through the College Hill pipe and 8.3 million gallons daily through the Baden-Merced line.

Suburban consumption, averaging 19.7 million gallons daily, was supplied directly from the several transmission and supply lines at various points in Alameda, Santa Clara and San Mateo counties.

An average of 40.0 million gallons daily was pumped from Crystal Springs reservoir into the San Andres reservoir through the Crystal Springs aqueduct and an average of 10.0 million gallons daily was pumped by Alemany pumps into the higher level of San Francisco.

The two bay crossing pipe lines carried an average of 96.8 million gallons daily across San Francisco bay. Of this amount, an average of 9.2 million gallons daily were used by consumers served from these two lines and the balance delivered into Crystal Springs reservoir. Of this total amount, Hetch Hetchy supplied 61.8 million gallons daily and the Alameda sources 35.0 million gallons daily.

Reservoirs:

Calaveras reservoir was higher on July 1, 1947, than at any time during the fiscal year, with a storage of 10,484 million gallons, or approximately one third the reservoir capacity. The reservoir storage dropped to 1,142 million gallons on February 26, 1948, the lowest storage in thirteen years, and rose slightly 5,299 million gallons on May 26, 1948. On June 30, 1948, the storage in Calaveras reservoir was 4,562 million gallons, or 14 per cent of its capacity. The reservoir was given three copper sulphate treatments during the year for algae control.

Taking advantage of the low water level in Calaveras reservoir the outlet screens were cleaned and painted.

Gravel and silt deposited behind Alameda Diversion dam was sluiced out during the very short flood period.

There was a decrease in storage during the year in Crystal Springs reservoir. The highest storage, 17,887 million gallons, occurred on July 1, 1947, and dropped to 15,098 million gallons on October 6, 1947. This corresponds to a capacity approximately 3,900 million gallons below the spillway lip. The water level rose to 17,024 million gallons on January 16, 1948 and then followed a downward trend to 15,771 million gallons, or 70 per cent of its capacity, at the end of the fiscal year. During the year the lower reservoir was given three copper sulphate treatments for algae. The upper lake was treated twice.

By continuous pumping from Crystal Springs during the year, San Andres reservoir was kept at a high level through most of the year. The maximum storage was 6,150 million gallons and was reached on May 10, 1948, being only three inches below the spillway lip on this date. The storage of San Andres reservoir on June 30, 1948, was 5,859 million gallons or 95 per cent of its capacity. The reservoir was given two treatments during the year for algae control.

On July 1, 1947, the storage in Pilarcitos reservoir was 542 million gallons. The minimum storage, occurring on October 3, 1947, was 483 million gallons. The maximum storage was 880 million gallons and was reached on May 6, 1948. The storage at the end of the fiscal year was 684 million gallons, or 67 per cent of its capacity.

During the year Pilarcitos reservoir supplied 843 million gallons to San Andres reservoir.

Pump Operations:

The G, O and F lines in the Pleasanton Well fields were rehabilitated during the year and twelve pumps were put in operation in February, 1948. Between February 2 and June 30, 1948, 1,661 million gallons were pumped from the Pleasanton Well fields to the Sunol aqueduct for delivery to the Irvington pumping station along the Bay Division pipes of the Hetch Hetchy aqueduct.

The new Irvington pumping station was put in operation in February, 1948. The station equipment includes one 500 hp, one 700 hp, and one 1,000 hp electric motors which drive 14 inch, 16 inch and 18 inch centrifugal pumps respectively. Waters from the Pleasanton Well fields and the Sunol filter galleries delivered through the Sunol aqueduct and the Niles-Irvington pipe line are boosted into the Bay Division pipe lines of the Hetch Hetchy aqueduct by this pumping station.

For the tenth consecutive year the Pulgas pumping station was not operated. One 500 hp motor, two 16-inch valves, one check valve and electrical equipment were removed from this station and installed at the new Irvington Pumping station.

The Crystal Springs-San Andres pumps were operated continuously during the year, and pumped a total of 14,631 million gallons to San Andres reservoir or an average of 40.0 million gallons daily. Two pumps were operated for the whole year, and the third pump for ten months. At the request of the Pacific Gas and Electric Company, to conserve power during the power shortage during the early part of the year, two of the pumping units were closed down for four hours each day during the time of peak electrical demand, from February 13 to April 20, 1948. The 700 hp motor shorted out on June 5, 1948, exposing bare wires in several

IRVINGTON PUMP STATION
This station, completed during the year, boosts well waters into Hetch Hetchy aqueduct.

places in the stator. To meet this emergency condition a spare 1,000 hp motor from Sunol was installed in place of the 700 hp unit. The interior of the station and equipment was cleaned and painted during the year.

The Baden pumping station was not operated during the year. One complete pumping unit and 1,000 hp motor was removed and installed at the Irvington pumping station. The floor of the station and the damaged portion caused by the removal of equipment, was repaired and painted. Some landscaping around the station was carried out but was not completed due to the construction of the 60-inch Sunset Supply line through the area.

The Alemany pumping station within the City was operated for the entire year for one shift a day. A total of 3,670 million gallons was pumped from the University Mound system into the College Hill and Sunset systems, which are normally supplied from San Andres reservoir.

Pipe Lines:

All water brought through the various transmission lines was treated with either chlorine alone or with both chlorine and ammonia.

New wooden bents were installed wherever required under the Niles-Irvington and Hetch Hetchy pipe lines.

Air valves on the Bay Division pipes of the Hetch Hetchy aqueduct were cleaned and painted during the year.

Three leaks on Hetch Hetchy pipe Line No. 1, due to electrolysis were repaired.

The Sunol pipe line from the Alameda Creek siphon to the town of Sunol, delivered a total of 100.5 million gallons of water during the year. Of this total, 70.6 million gallons were used for irrigating the walnut orchard, and the balance of 29.9 million gallons were used for the Sunol domestic supply.

For the first seven months of the fiscal year the Niles-Irvington pipe line was used to carry a reverse flow of approximately a hundred thousand gallons daily from the Bay Division pipe lines to Niles reservoir to maintain a potable supply of water in the line. Starting in February, 1948, the pipe line was used to carry waters developed at Pleasanton Well fields and Sunol filter galleries to the Irvington pumping station for boosting into the Hetch Hetchy lines.

The Alameda pipe line from Niles to Centerville was used to deliver water to the Alameda County Water District's absorption pit north of Centerville. This section of line is maintained by the district. From Centerville to the bay the pipe is out of service other than as a spillway to dump water into the bay in emergencies.

On the west side of the bay the section of the Alameda transmission line between Burlingame and San Carlos continued to deliver Crystal Springs water to local consumers. As in past years, considerable trouble from leaks occurred in this pipe line. Sixteen leaks occurred during the year, principally between Seventeenth and Twenty-eighth avenues, San Mateo, and the north end of Belmont. The water pressure in this line is controlled so as to reduce the amount of leakage, but consideration must be given to providing rehabilitation or replacement of at least portions of this line in the immediate future, as it is becoming increasingly difficult to maintain the line in operation.

During the fiscal year the two Bay Division lines carried a total of 35,441 million gallons across the bay, of which 32,075 million gallons were delivered to Crystal Springs reservoirs. Eight leaks on the San Mateo County portion of these two lines were repaired, six of which were west of Redwood City.

The Dumbarton gatehouse was cleaned and painted, as was a portion of the bay crossing bridge trestle and pipe. The trestles and portions of the pipe line in Cordilleras canyon were cleaned and coated.

The Palo Alto pipe line delivered a total of 1,879 million gallons to various consumers along the line south of Redwood City, an average of 5.13 million gallons daily. The maximum week's demand on this line averaged 8.73 million gallons daily as compared to 8.24 million gallons daily for the maximum week's demand for the preceding year.

Both of the Crystal Springs pipe lines were in service throughout the year, carrying an average of 52.6 million gallons daily through the two lines. Of this total, 40.0 million gallons daily were supplied for consumption to the University Mound district and the balance diverted to other districts or supplied to suburban consumers. Two leaks occurred in the 63-year-old 44-inch line and three leaks due to electrolysis occurred in the 60-inch line in the Visitacion Valley area. The trestle and pipe housing on the 44-inch line crossing the South San Francisco marsh land was repaired.

San Andres pipe line No. 1 delivered an average of 7.3 million gallons daily to the College Hill district throughout the year, and in addition, from July 1, 1947, to the middle of March, 1948, water was diverted from this line to the Baden-Merced 30-inch pipe line. Three leaks occurred during the year in San Andres pipe line No. 1. The flow in the portion of the line from Baden to College Hill reser-

voir is kept below 7.5 million gallons daily, which is the maximum flow that can be carried safely by this line which was built in 1870.

Water for the College Hill district in excess of 7.3 million gallons daily delivered through the 30-inch line was made up by transferring water through the Crosstown pipe line from the San Andres 54-inch pipe and by water pumped from University Mound by the Alemany pumps.

A total of 9,529 million gallons of water was drawn from San Andres reservoir into the San Andres 54-inch line. During August, 1947, 119 million gallons were diverted from this line into the Baden-Merced branch. Three leaks occurred on the 54-inch line during the year. Trouble from electrolysis, which was very prevalent in the past, has been practically eliminated.

No leaks occurred on the 30-inch Baden-Merced pipe line during the year. The line carried an average of 8.3 million gallons daily. For the first eight and one-half months of the fiscal year the Baden-Merced pipe line was supplied from the San Andres lines and for the remainder of the year from the 60-inch line leading from Crystal Springs reservoir to University Mound.

During the year the section of the 60-inch Sunset Supply line from Colma to Sunset reservoir was completed except for a section across an arm of Lake Merced. Just prior to the end of the fiscal year work was started on this short stretch across the lake. Also, in April, 1948, construction was started on the portion of the 60-inch Sunset Supply line from Baden to Colma. The line when completed from Baden to Sunset reservoir will be able to carry San Andres water and Crystal Springs water to Sunset reservoir within the City. Since Crystal Springs water cannot flow to Sunset reservoir by gravity it will be necessary to boost the water either at the Baden Pump station or the new Lake Merced pumping plant.

Aqueducts:

Starting in February, 1948, the Sunol aqueduct was used to carry waters from the Pleasanton Well fields and the Sunol filter galleries to the Niles reservoir, from which point the waters entered the Niles-Irvington pipe line and were carried to the new Irvington pumping station for boosting into the Bay Division pipes of the Hetch Hetchy aqueduct for delivery to consumers on the west side of the bay. A small amount of water carried by the Sunol aqueduct before February was made available as delivery to the Alameda County Water District.

The Crystal Springs aqueduct was in operation throughout the year. No serious maintenance trouble was experienced because of the very dry season. Ordinarily the winter runoff causes slides along the aqueduct making operation at times very difficult.

The Pilarcitos aqueduct operated continuously throughout the year and carried an average of 2.3 million gallons daily to San Andres reservoir. The aqueduct has a capacity of 40 million gallons per day.

Section No. 1 of the Stone Dam aqueduct was replaced during the year. The old four-by-five foot wooden flume extending from Stone Dam to the brick lined tunnel No. 1 was dismantled and replaced by a concrete lined horseshoe shaped tunnel 538 feet in length, and 1,814 feet of 39-inch diameter reinforced concrete pipe laid from the new tunnel to the brick lined tunnel. The aqueduct was shortened approximately 1,800 feet by the change.

The old 2′ 9″ x 4′ 10″ wooden diversion flume from San Mateo Creek Dam No. 2 to Stone Dam Aqueduct Tunnel No. 2 was replaced by a reinforced concrete elevated flume 2′ 6″ wide by 2′ 8″ high, and approximately 510 feet of 30-inch inside diameter reinforced concrete pipe.

Alameda General:

The Upper Alameda Creek diversion tunnel was inspected and found to be in good condition.

The Sunol filter galleries were rehabilitated, gravel dams were built, new screens made, and flood gates repaired.

The Town of Sunol distribution pipe line was rehabilitated, approximately 6,156 feet of 4-inch, 5-inch and 6-inch pipe being laid.

A recorder was installed and water delivery to Hearst reservoir resumed.

The Water Temple road and Sunol headquarter roads were resurfaced under contract during the year.

Roads in the Division were graded and gravel road surfacing repaired.

A new garage was built to house trucks and other equipment.

General painting of buildings was carried out throughout the Division.

Fireguarding, road maintenance, building and repairing of fences, brush cutting and general cleanup was carried on throughout the year.

Gauge height records on Mocho, Del Valle, Costa, Laguna-Alameda creeks were continued as in past years.

Peninsula General:

The road from Redwood City to the City's watershed properties, known as Whipple Road, and the Canada Road from Ralston Avenue to the south end of the watershed property, were re-aligned by San Mateo County during the year and made into modern high speed boulevards. While Canada Road was closed for repairs the reflection pool at the Pulgas outfall was dried up and painted.

San Andres Outlet No. 3 was put into operation on March 17, 1948, delivering water together with the Bald Hill Outlet to the 44-inch San Andres transmission lines.

The Millbrae standpipe and tower, which were used in conjunction with the operation of the old Millbrae pumping station, were dismantled and material of any value salvaged.

The lighting system through the tunnel to the shafts at both ends of the North San Andres outlet were overhauled.

The keeper's cottage at Crystal Springs and Pilarcitos were re-roofed with fire resisting shingles.

The keeper's cottage at the head of San Andres reservoir was repaired and changes made in the building.

A portion of the Millbrae pumping station building was converted into offices for use by engineering forces working on Bay Division Pipe Line No. 3 and parking sheds were built adjacent to the building.

During the year painting was carried out on the exterior of the Millbrae pumping station building, the Assistant Superintendent's cottage, the general foreman's cottage, the cook's and men's quarters building and the walls of the main warehouse building at Aqua.

The Millbrae men's quarters and boarding house were closed as the cost of continuing operation was greater than the benefits received.

Alameda County Water District:

A total of 178 million gallons was released during the year to the Alameda County Water District for replenishment to the underground gravel of the Niles Cone area. Under the terms of the 1920 award, 867 million gallons were due the district during the year. There thus resulted, under the terms of the 1936 agreement, a decrease of 675 million gallons in our "advance release" to the District. The total of computed "advance release" to June 30, 1948, amounts to 26,942 million gallons.

In arriving at an advance release of 23,381 million gallons no credit has been taken for the flow in dry seasons of some 3,548 million gallons between September 16, 1943, and June 30, 1948. From September 16, 1943, to September 30, 1946, this dry season flow was definitely contaminated by the effluent from Camp Parks sewage plant and unfit for domestic use. Although there was only small flood flow between January 1, 1947, and June 30, 1948, no credit as advance release has been taken during this period as due to the questionable quality of water it has been considered as unfit for diversion into the Sunol Aqueduct for domestic supply water and therefore was not so diverted.

Of the past year's release 174 million gallons were delivered through the Alameda pipe line to the district's absorption pit near Centerville and a total of 4 million gallons percolated from the water released into Alameda Creek from Niles Reservoir Weir.

The district continued throughout the year to augment its domestic supply by purchasing 115 million gallons of water from the Department.

Pleasanton Township County Water District:

The U. S. Navy's activities at Camp Shoemaker were largely curtailed and were practically eliminated by June 30, 1947. However, a portion of the camp was taken over by the Sheriff of Alameda County and has continued to be used as a jail farm, taking its water supply as well as the water supply for the former Naval housing project, Komandorski Village, from the Navy's 100-acre tract within the water district. All this resulted in a more or less gradual decrease in quantity of water taken from the Pleasanton underground source for use at Camp Shoemaker until the draft at the end of June, 1947, averaged some 700,000 gallons per day, and continued near this rate up to the end of June, 1948. No water was taken from the department's Pleasanton wells for export until February, 1948, since which date the draft by San Francisco for export has averaged 11.8 million gallons daily. Due to this draft and the irrigation draft, together with two winters of only slight replenishment, the water level in this area showed a further recession over the previous year. On June 30, 1948, the water table in Pilot Well No. 103W was 76 feet below ground surface as against 60 feet below ground surface on June 30, 1947. On June 30, 1948, the water level in Well No. F-28 was 63 feet below ground surface as against 30 feet below ground surface at the end of the previous fiscal year.

Due to the lowered water table the department's obligation of furnishing water to the town of Pleasanton and paying electric charges for operating landowner's wells has continued.

The town of Pleasanton continued to obtain all its water supply from the Water Department's wells throughout the year and paid all the resulting power bills until February, 1948, when the Water Department resumed its obligation of furnishing water to the town of Pleasanton. On the same date the Water Department also resumed its obligation of paying power bills for the community wells and also

power bills for the landowners, all as enumerated in the agreement with the Pleasanton Township County Water District.

During the next eighteen months, due to our pumping operations in the area, the community wells and the landowners will be facing water shortages. Plans were formulated during the year to make the expenditures necessary to relieve these situations individually as they occur, all in accordance with the agreement obligations.

Outside Meters:

There were 17 new services installed during the year for suburban consumers. The total number of suburban connections at the close of the year was 1,021, of which 720 were active consumers.

Gross suburban water sales for the past year amounted to $1,433,886, which was an increase of 9.6 per cent over the preceding year.

CITY DISTRIBUTION DIVISION

Water Consumption:

The average daily consumption within the City was 81,302,282 gallons, a decrease of 2,012,299 gallons under the previous year. This is a decrease of 2.4 per cent. The three newer residential districts had a slight increase, 2.1 per cent in the Forest Hill and 1.2 per cent in the Stanford Heights Districts. Merced Manor had a consumption increase of 51.1 per cent, but as the district uses only about one million gallons a day the increase amounted to only 540,000 gallons.

The largest loss was in the industrial University Mound District. There the consumption dropped from 31.3 to 29.7 million gallons a day, a loss of 1.6 million gallons or 5.2 per cent. The College Hill District dropped from 9.1 to 8.4 million gallons a day, a loss of 673,000 gallons or 7.4 per cent. The consumption in the Sunset District decreased 385,000 gallons or 1.2 per cent.

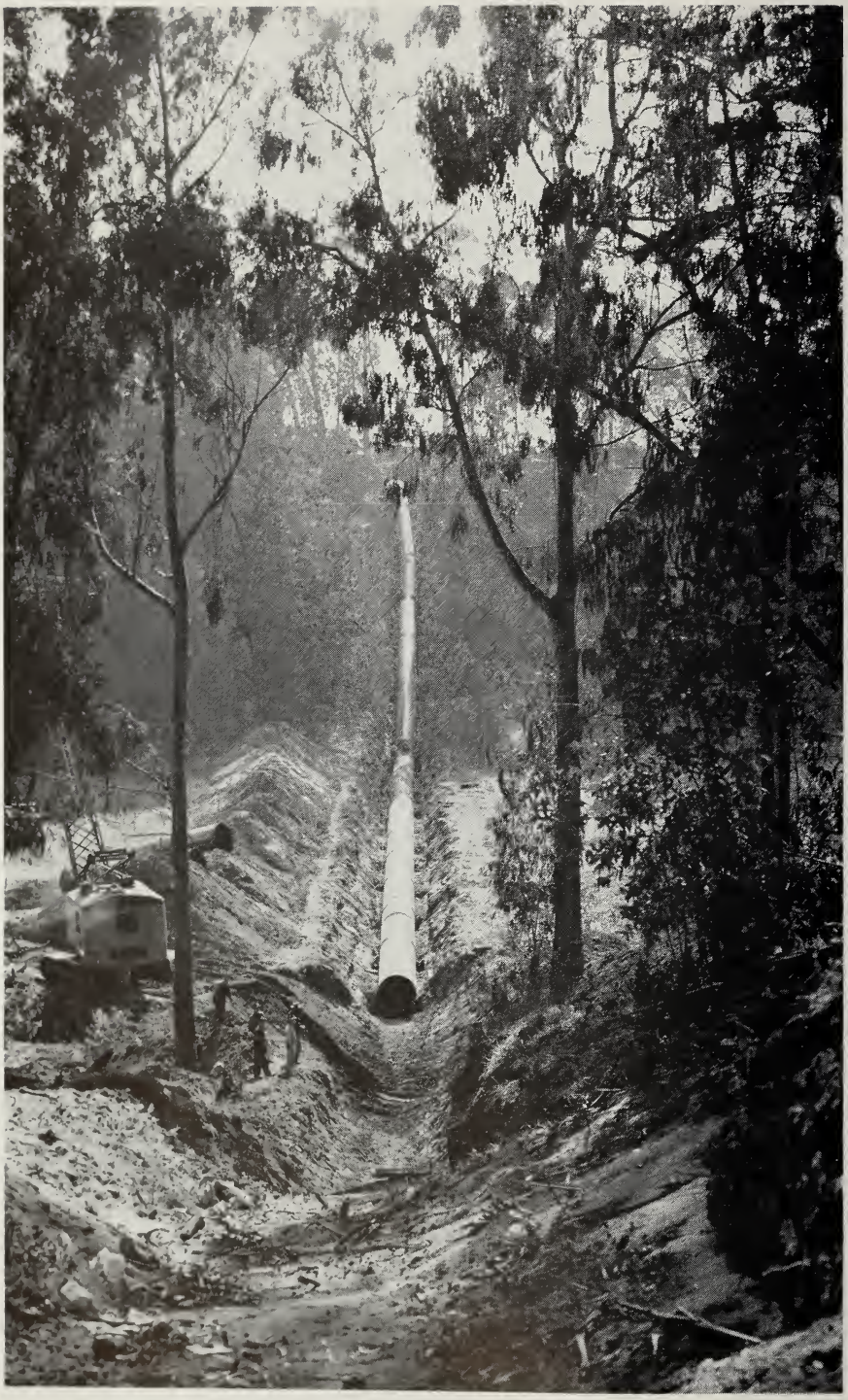
Operating Conditions:

The slight recession in consumption has left operating conditions in about the same condition as they were at the end of last year. A new pump was added to both the Lake Honda and Forest Hill Pumping Stations so that capacity to supply Forest Hill Tank is now sufficient for some years to come. It was necessary to run both steam pumps at Central Pumps for the entire year to supply the Stanford Heights District with only the electric pump as a reserve. In view of the fact that adequate capacity is being provided in the proposed Lake Merced Station no additional pumping capacity will be installed at Central Pumps.

The pipe system supplying Stanford Heights is still being operated beyond its proper capacity. This can only be properly remedied by the completion of the Sutro system. New primary mains are needed in all of the three larger districts, as discussed in the report last year.

Transmission Mains:

It was necessary to replace about 100 feet of the College Hill line north of Sickles Avenue. This ancient pipe line is in bad condition. The other transmission lines are generally in satisfactory condition. The old Crystal Springs and the Baden-Merced pipe lines are showing the effects of age. The new Crystal Springs and the 54-inch San Andres lines are in good shape.



60-INCH SUNSET SUPPLY LINE

City Reservoirs:

The reservoirs are in good condition. Wilde Avenue Reservoir was cleaned in February and College Hill Reservoir in August, 1948. The tanks, except Forest Hill, need painting, but all money for that purpose was stricken from the budget. A low water alarm was installed in Wilde Avenue Reservoir. No work was done on the Sutro Reservoir during the fiscal year. The excavations and embankments as previously reported were completed in the previous year. Funds to provide for placing the concrete lining and roof were deleted from the budget this year so that completion of this important project will be deferred at least another year.

Lake Merced:

No water was drawn from the Lake during the year. The boating concession is now being operated by Charles M. Kay who bought the interest of his partner, Michael Schrum. Three regattas were held on the Lake, on June 6, July 11 and August 29, 1948, in which the local oarsmen took part. Also on August 8 outboard motor boat races were held on the Lake. This latter event left an objectionable amount of oil on the Lake, particularly around the landing float.

Pumping Stations:

Central Pumps were operated throughout the year, pumping 3,700,100,000 gallons, an average of 10,109,590 gallons a day. Alemany Pumps were operated for the entire year for one shift a day. A total of 3,670,030,000 gallons was pumped, an average of 10,027,404 gallons a day.

A new 600 gallon a minute pump was installed at Forest Hill Pump Station and a 400 gallon a minute pump at the Lake Honda Pump Station. The Francisco Pump was equipped to run automatically, but conditions were such that it was not required to operate at all during the first six months of 1948. The other small pumping stations have operated throughout the year and are in good condition.

City Pipe System:

Only routine extensions were made during the year, the data being given in Table No. 7. It is still very difficult to get pipe, and the inadequate size of our revolving fund prevents our placing orders for pipe far enough in advance to insure delivery of pipe before the present stock is exhausted. Under these conditions we anticipate that due to lack of pipe we will be unable to make necessary extensions to supply service in new areas during the most of 1949.

Service and Meter Installations:

There were 3,231 domestic and 30 fire services installed during the year. New meters set were 3,917. There were 3,742 meters changed and 418 brought home. All services and meters were maintained in good condition.

WATER PURIFICATION DIVISION

Normal precautions for safeguarding the San Francisco water supply were in force throughout the year. Disinfection of all supplies was continuous, and all consumers received water which was in full compliance with the bacteriological standard established by the U. S. Public Health Service for drinking water purity. There was no case of a water-borne disease that could be attributed to the public water supply. Water served throughout the year was moderately soft, and of

relatively low mineral content. The aesthetic quality was acceptable and probably as good as may be expected without treatment in modern filtration plants.

All positions within the department were reclassified by the Civil Service Commission during the year, placing personnel in either chemist or engineering classifications.

Laboratory:

All analytical work, except necessary field tests, in water chemistry, bacteriology and biology was performed in our laboratory located at Millbrae. Building alterations during the year required rearrangement of facilities, which improved working conditions making for better operating efficiency. The laboratory is reasonably well equipped and has a certificate of approval from the State Department of Public Health for the examination of waters to determine their conformity with public health requirements. The certificates are issued each year early in January and are subject to revocation at any time.

Following is a tabulation which summarizes the field and laboratory tests made:

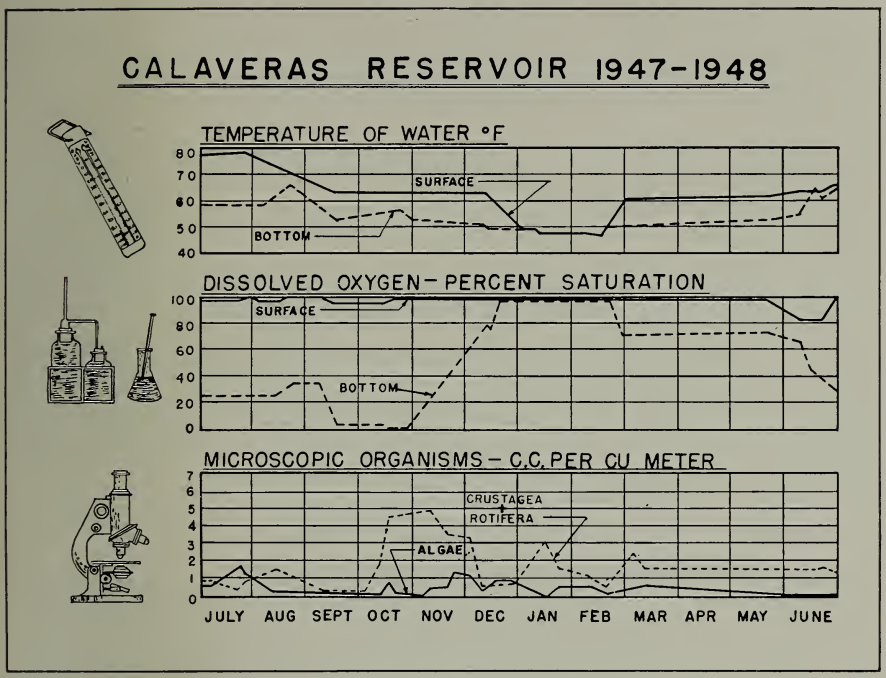
Bacteriological Examinations	6,119
Microscopical Examinations of Algae	297
Slime Organisms—Inoculations and Examinations	239
Electrical Conductivity Measurements	3,209
Complete Mineral Analyses	9
Partial Chemical Analyses	498
Nitrogen Cycle Determinations	10
Dissolved Oxygen Tests	826
Analyses to Determine Origin of Leaks	224
Complaint Investigations	55
Turbidity Measurements	2,918
Misc. Laboratory Tests Not Otherwise Included	405
Miscellaneous Field Tests	3,012

No new laboratory equipment was purchased during the year.

Chlorination:

All water served to consumers was disinfected by the addition of chlorine, and no water was exposed to contamination between the time of last chlorination and the consumer's tap. As water from the Hetch Hetchy and Alameda systems passes through large terminal storage reservoirs on the peninsula and a portion again through open distribution reservoirs in San Francisco, much of our water requires chlorination twice and a small portion three times between the source and the consumers service. Seven of our thirteen chlorination stations operated continuously. Calaveras and San Andres No. 2 stations operated for 9 and 11.7 months respectively. San Andres No. 3 station operated continuously since early March of 1948. Two standby stations were in service intermittently as required by operating conditions. The portable chlorination unit was used a number of times in the sterilization of large new pipe lines. All equipment was inspected periodically, repaired when necessary, and at all times maintained in first class operating condition.

A total of 857,178 pounds of chlorine was used during the year for water treatment throughout the system. Dosages ranged from four to four and one-half



pounds per million gallons at the peninsula division stations, with lower feed rates at the city stations and considerably higher feed rates at the stations treating water entering our Hetch Hetchy aqueduct. The major portion of chlorine used was to maintain adequate chlorine residuals from Tesla to Pulgas outfall in the Hetch Hetchy aqueduct water for control of organisms entering with tunnel infiltration water.

Actual installation of equipment in the San Andres No. 3 station was completed during the year, but no new equipment was purchased nor were any new stations constructed.

Algae Control:

Algal catches were collected weekly or bi-weekly from each local storage reservoir, and the samples brought to the laboratory for microscopical examination. The results of these examinations were used in determining the necessary treatments for algae control, requiring the use of 114,600 pounds of copper sulfate during the year. Calaveras reservoir was treated during the months of July, September, and October for the control of anabaena, aphanizomenon, and ceratium, requiring 38,100 pounds of copper sulfate. Upper Crystal Springs reservoir was treated in early October and late November for the control of staurastrum and dinobryon, requiring 19,800 pounds of copper sulfate. Lower Crystal Springs was treated in the months of January, April, and June for the control of aphanizomenon, staurastrum, and ceratium, using a total of 38,400 pounds of copper sulfate. San Andres reservoir was treated in August and again in April for the control of mougeotia, ceratium, and aphanizomenon, requiring 17,200 pounds of

copper sulfate. Pilarcitos, requiring only one treatment this year, was treated in August for the control of ceratium, using 1,100 pounds of copper sulfate. Algae growths requiring control do not appear in our Hetch Hetchy reservoir and seldom appear in our open distribution reservoirs in the city.

Cross-Connections:

The program of inspecting at regular intervals the double check valve assemblies for backflow protection installed on the service lines to premises having a secondary water supply was somewhat curtailed this year because of lack of personnel. There are at present 168 of these installations throughout our water supply system. These devices are required by state and federal health authorities to meet their certification requirements. They are installed and maintained by the consumer but are inspected by our personnel to insure proper operating efficiency. In addition, there are 377 of these double check valve assemblies installed on the service lines to fire or water service hydrants on the waterfront, 203 of which were installed and are maintained by the Water Department. Spot checks on these assemblies throughout the year showed them to be operating satisfactorily. All backflow protection assemblies were installed to prevent possible contamination of the public water supply within the distribution system.

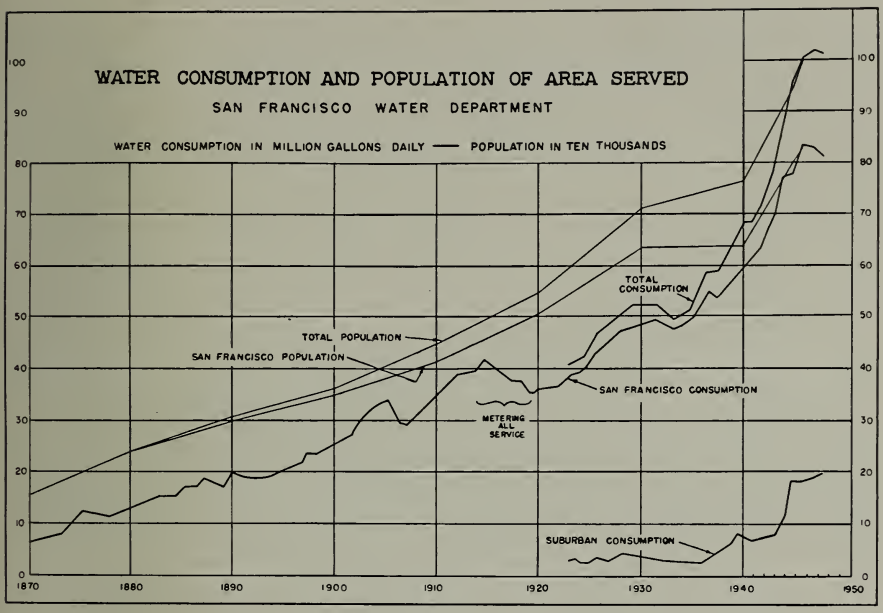
Inspections:

Several inspections were made of the bay-crossing lines during the year to determine slime organism activity. No inspections were made of the Coast Range tunnels nor of the Irvington tunnel, as these would have required shutdowns which were not advisable during this period of subnormal local runoff. Control of these organisms has been somewhat more difficult during the latter part of this fiscal year because it was necessary to mix water from Hetch Hetchy, Calaveras, Pleasanton well field, and Sunol filter galleries in the aqueduct in order to bring all available water into our peninsula terminal storage reservoirs. However, chlorine treatment of all waters was increased in order to maintain residuals of approximately 0.3 to 0.5 ppm. in the aqueduct at Redwood City; and no particular degradation of the aesthetic quality of the water was encountered nor is anticipated in the near future.

A joint sanitary survey of the sewage disposal systems at O'Shaughnessy Dam and at Tuolumne Meadows was made with a representative of the United States Public Health Service which showed that no sewage pollution was entering the headwaters of the Tuolumne River. Periodic inspections were made of our local watersheds for protective purposes. A recommendation for favorable certification of our supply was made this year to the United States Public Health Service by the State Department of Public Health after inspection of laboratory and water treatment records without the usual field survey of facilities.

Corrosion Control:

The moderately soft water served to San Francisco consumers, like most such untreated waters, continues slightly corrosive causing few complaints during this year. The extremely soft Hetch Hetchy water is somewhat more aggressive as is evident in our steel transmission lines where there are spots devoid of protective coating. This water, when not mixed with local supplies, results in more numerous complaints from aqueduct consumers. Experimental work at Tesla Portal has shown the efficiency of lime treatment in reducing the corrosive characteristics of this water; and now that additional money has been appropriated in the 1948-1949



budget it is contemplated that a lime treatment plant will be constructed east of Oakdale Portal during the coming year to treat this water.

Water Quality and Complaints:

The chemical quality of all water service to consumers was good, and the concentrations of all dissolved salts were well under the recommended limits established by the United States Public Health Service in their 1946 Drinking Water Standards. Harmful elements such as lead, arsenic and hexavalent chromium were absent and elements such as copper, iron, zinc, magnesium, sulfates, and chlorides were well under accepted limits. Fluoride, now receiving wide public attention because of its effect on the reduction of dental caries, is present in our supplies in only very low concentrations, actually about ten per cent of the amount generally considered necessary to be effective in reducing tooth decay.

The average monthly hardness of water served from our peninsula reservoirs ranged from 51 ppm. to 66 ppm., with an overall weighted average of about 61 ppm., which is equal to 3.56 grains per gallon. The average monthly hardness of water served to our Hetch Hetchy aqueduct consumers ranged from 54 ppm. to 74 ppm., with an overall average of about 61 ppm. However, considerable daily fluctuation in mineral content may occur at times as a result of changes in volume of water pumped into the aqueduct at Irvington pump station. Such changes are necessary for efficient operation.

Water withdrawn from the peninsula reservoirs had a pH ranging from 7.5 to 7.9, with an average of 7.7; an alkalinity content ranging from 50 ppm. to 64 ppm., with a weighted average of 60 ppm.; and a chloride content ranging from 7 ppm. to 11 ppm., with a weighted average of 8 ppm. Water served from the Hetch Hetchy aqueduct had a pH ranging from 7.3 to 7.8, with an average of about 7.5; an alkalinity content, in general, ranging from 41 ppm. to 84 ppm., with an aver-

age of about 58 ppm.; and a chloride content ranging from 5 ppm. to 14 ppm., with an average of 8 ppm. There were, however, some short time fluctuations in water quality in the aqueduct which exceeded these limits.

Temperatures of water served from our peninsula reservoirs ranged from a winter minimum of 47° F. to a summer maximum of 70° F., with a weighted average of about 60° F. Dissolved oxygen content ranged from 7.2 ppm. to about 13 ppm., which exceeded eighty per cent of saturation for the corresponding water temperature, except on a few occasions. The temperature of water in the Hetch Hetchy aqueduct ranged from 46° F. to 67° F., with an average of about 56.5° F. The dissolved oxygen content ranged from 7 ppm. to 12.8 ppm., which, for the most time, exceeded eighty per cent saturation for the corresponding water temperature.

Complaints of water quality continue to be sporadic, and as usual the majority were of dirty water. However, the lack of appreciable runoff in our peninsula reservoirs aided in providing a clearer water for consumption, and there was an approximate twenty per cent decrease in complaints of water quality as compared with last year. The first year of heavy peninsula runoff doubtless will cause an increase in complaints as we have no means of removing turbidity other than sedimentation in our peninsula storage reservoirs. This process, which is of considerable benefit, is not completely efficient in turbidity removal and, therefore, artificial treatment methods must be provided to insure crystal clear water at all times.

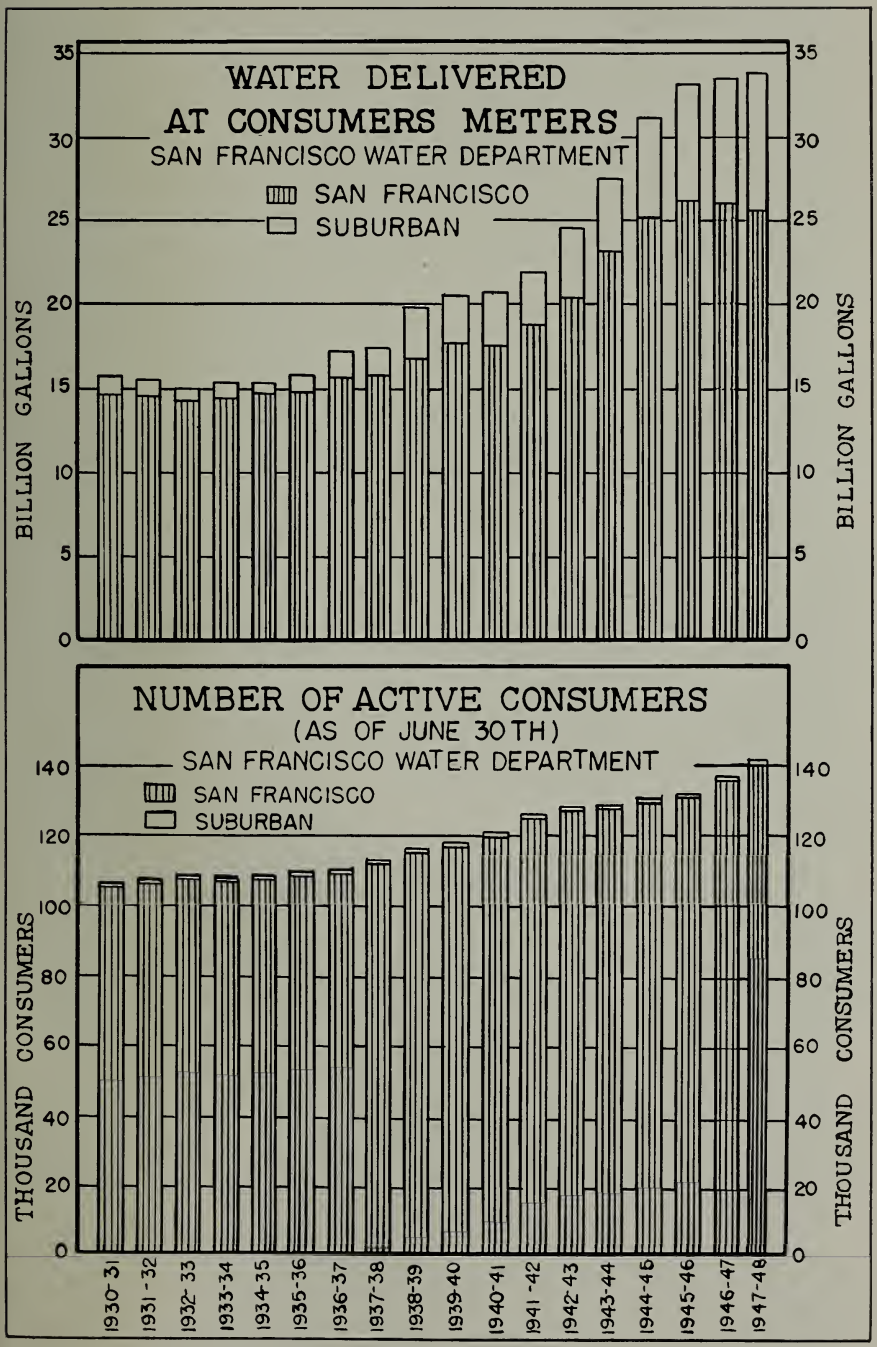
MONTHLY SUMMARIES OF BACTERIOLOGICAL ANALYSES

Samples Collected from the San Francisco Distribution System in Accordance with Certification Requirements

Month	Number of Samples	10 ml. Portions			Samples Positive (3 or More Tubes)	
		Number of Tubes	Tubes Positive	Per Cent Positive	Number Positive	Per Cent Positive
1947						
July	313	1565	10	0.639	0	0
August	312	1560	6	0.385	0	0
September	337	1685	13	0.771	0	0
October	340	1700	12	0.706	0	0
November	305	1525	4	0.262	0	0
December	341	1705	6	0.352	0	0
1948						
January	305	1525	3	0.197	1	0.328
February	303	1515	1	0.066	0	0
March	341	1705	15	0.880	2	0.587
April	349	1745	5	0.287	1	0.287
May	317	1585	4	0.252	1	0.315
June	348	1740	2	0.115	0	0

WATER SALES DIVISION

Gross Water Sales amounted to $10,637,760 of which $9,203,874 was produced in San Francisco and $1,433,886 was produced in the Suburban Area. Deduction of $23,183, for allowances and refunds resulted in net sales of $10,614,577 an increase of $95,226 or 0.91 per cent over the previous fiscal year. The exclusion of $585,559


WATER DELIVERED
AT CONSUMERS METERS
SAN FRANCISCO WATER DEPARTMENT
SAN FRANCISCO
SUBURBAN
BILLION GALLONS
0
5
10
15
20
25
30
35
NUMBER OF ACTIVE CONSUMERS
(AS OF JUNE 30TH)
SAN FRANCISCO WATER DEPARTMENT
SAN FRANCISCO
SUBURBAN
THOUSAND CONSUMERS
0
20
40
60
80
100
120
140
1930-31
1931-32
1932-33
1933-34
1934-35
1935-36
1936-37
1937-38
1938-39
1939-40
1940-41
1941-42
1942-43
1943-44
1944-45
1945-46
1946-47
1947-48

in municipal non-paying sales results in net revenue sales of $10,029,018. Net sales in San Francisco decreased $30,504 to $9,181,721. This decrease occurred despite an increase of $78,059 in revenue from residential accounts and is reflected principally in commercial and industrial accounts. Suburban net sales were $1,432,856, an increase of $125,730. These suburban accounts produced 14.3 per cent of our revenue sales.

Deliveries through the Palo Alto pipe line continue to increase. The total for the fiscal year was 249,559,100 cubic feet, an increase of more than 50,000,000 cubic feet over the delivery during the previous fiscal year. Revenue from the line showed a corresponding increase being $298,057, an increase of $66,346. Revenue obtained from civil divisions outside San Francisco, who are taking water for resale, grossed $488,750, an increase of $44,260 over the previous fiscal year.

Active consumers' accounts at June 30, 1948, were 141,143 an increase of 3,549 over the previous June 30.

Closing bills issued for the year again decreased slightly to 20,751. Accounts written off as uncollectible amounted to $1,661, a decrease of $287. The suspense balance, consisting of closed accounts awaiting collection or write off, increased by $918 to $3,821 at June 30, 1948.

New services and distributors installed during the year aggregated 4,006, an increase of 1,120 installations over the previous year. The bulk of the installations again were in the Sunset-Parkside and South of Market-Twin Peaks areas. Metered services at June 30, 1948, totaled 142,108 of which 140,423 were active, revenue producing accounts. There were only 1,685 services temporarily shut off. Automatic sprinkler installations continued active, there being 27 during the year. New work, principally new building construction, inspected by our Builders and Contractors Section increased to 3,992.

Consumer's accounts receivable at June 30 again showed a decrease while sales were increasing. Collections for the year amounted to $10,063,316. A decrease of 208 man days service by the regular collectors reflected the difficulty of maintaining an adequate staff. Despite the decrease, however, and the necessity of constantly breaking in temporary replacements, the average number of bills collected per man day remained at 62 with an increase from 27.6 per cent to 28.5 per cent in the ratio of bills collected to bills taken out. The decrease in bills handled by the collectors resulted in an increase of 106,383 bills mailed. The total of 684,281 bills mailed was approximately 40 per cent of the total bills issued, the balance being handled by the various collectors and picked up at the office by consumers. Bills paid by mail again increased to 555,049 or about 34 per cent of the total bills issued. Bills paid at the banks remained at approximately 36 per cent of the total bills issued.

ENGINEERING DIVISION

In addition to carrying on normal engineering activities in connection with regular activities, this division has had an active year in the design, preparation of specifications, and supervision of construction and maintenance work on many projects.

Plans and specifications were prepared for twenty-eight formal and three informal Water Department contracts which were awarded for a total estimated amount of $1,565,203.25. Engineering, supervision and inspection services were provided for $1,049,956.93 worth of contract work actually completed during the year.

INLET STRUCTURE TO STONE DAM AQUEDUCT No. 1

Of the twenty-eight formal contracts awarded during the fiscal year 1947-48, seventeen were for water main extensions. Three of these extensions were awarded to the Water Department in an amount totaling $14,556.00, and were completed during the year at a cost of $10,917.74, or $3,638.26 less than the bid price. The largest single contract awarded during the year was $667,289.00 for the construction of a 28,000 foot section of the 60-inch Sunset Supply line from Colma to Sunset reservoir in San Francisco, except for a short section across an arm of Lake Merced. The contract was completed on May 12, 1948, at $35,476.88 less than the bid price.

During the year the wooden flume at San Mateo Dam No. 2 was replaced with a reinforced concrete elevated structure and sections of reinforced concrete pipe. The old wooden flume comprising Section No. 1 of the Stone Dam aqueduct was replaced by a concrete lined tunnel and a reinforced concrete pipe line. The former replacement was completed on February 23, 1948 at a cost of $44,690.03 and the Stone Dam aqueduct replacement was completed on March 3, 1948, at a cost of $132,564.09.

The contract for the construction of the Irvington pumping station was awarded on March 31, 1947, and was officially completed on March 4, 1948, at a cost of $84,228.49. Actual operation of the station commenced in early February. Waters developed at the Pleasanton well fields and at the Sunol filter galleries are now conveyed to this pumping station and boosted into the Bay Division pipes of the Hetch Hetchy aqueduct.

The existing water distribution system in the town of Sunol was rehabilitated during the year at a cost of $9,619.07.

During the year a contract was awarded for the constructing of collecting lines at the Pleasanton well fields and for the relocation of a portion of the Pleasanton pipe line, and work under the contract was completed on December 31, 1947, at a cost of $26,537.03.

A contract was awarded for the construction of the section of the 60-inch Sunset Supply line from Baden to Colma on April 12, 1948, at a bid price of $319,895.00, and on June 21, 1948, a contract was awarded for the construction of a crossing at Lake Merced as part of the 60-inch Sunset Supply line; the bid price for this portion being $65,912.00.

Field engineering and right of way work was continued during the year in preparation for the construction of the new Bay Division pipe line No. 3 from the Irvington portal of the Hetch Hetchy aqueduct, around the south arm of the bay, to Crystal Springs reservoir.

The Water Department is presently engaged in a project to utilize more fully the value of Lake Merced as an auxiliary emergency supply for San Francisco. Plans contemplate the construction of a new prime mover pumping plant which will normally handle the pumping operations performed at Central pumps and which will also serve to boost water from Crystal Springs to the higher elevations in San Francisco, thereby relieving a portion of the load now being carried by the Crystal Springs pumping station. In an emergency the new pumping station can be used to draw water from Lake Merced and deliver same to the higher levels throughout the City.

Considerable work involving preparation of property descriptions, granting of revocable permits and preparing terms and conditions for land transactions was performed by the Engineering division.

Engineering service was rendered to other departments of the Public Utilities

Commission when requested. As in the past, photostatic and photographic work was done for all city owned utilities.

A brief description of work performed, under contract, during the fiscal year follows:

Formal Contracts:

1. Additions to City Pipe System:

In all contracts involving the laying of cast iron or transite pipe or the installation of services, contractor is required to obtain the pipe and fittings from the Water Department. The cost of this material, the cost of connections made by the department's forces, the engineering and inspection are included in the following stated contract costs. In cases where the Water Department acts as the contractor the cost given is the actual cost of the completed work.

Contract No. 425—Provided for the installation of 150 services and the laying of 2,500 feet of 4-inch, 5,500 feet of 6-inch, 4,700 feet of 8-inch and 300 feet of 12-inch cast iron mains in Laurel Heights Subdivision. The contract was awarded to E. J. Treacy on July 8, 1946, and work was completed on November 10, 1947, at a cost of $40,744.16.

Contract No. 426—For the installation of 152 services and the laying of 2,200 feet of 6-inch, 1,480 feet of 8-inch, and 430 feet of 12-inch cast iron mains in Miraloma Park Subdivision. The contract was awarded to Fred T. Fairey on June 30, 1947, and was completed on September 24, 1947, at a cost of $16,817.08.

Contract No. 439—For the laying of 850 feet of 6-inch cast iron pipe to the Palace of the Legion of Honor. The contract was awarded to the Water Department on November 5, 1947, and was completed on December 19, 1947, at a cost of $2,119.35.

Contract No. 449—Provided for the laying of 3,200 feet of 16-inch cast iron main in 3rd Street from Evans to Arthur Avenue, and in main easement to Pier 92. The contract was awarded to E. J. Tobin on May 12, 1947, and was completed on August 19, 1947, at a cost of $32,952.90.

Contract No. 450—Provided for the installation of 25 services and the laying of 420 feet of 6-inch transite pipe, 250 feet of 2-inch and 1,200 feet of 8-inch cast iron mains in 14th Avenue and Fanning Way. The contract was awarded to the Water Department on June 2, 1947, and was completed on August 7, 1947, at a cost of $6,899.04.

Contract No. 453—For the installation of 578 services and the laying of 7,700 feet of 6-inch cast iron main and 2,700 feet of 8-inch transite pipe in the Sunset and Parkside districts. The contract was awarded to Fred T. Fairey on June 17, 1947, and was completed on August 8, 1947, at a cost of $34,524.06.

Contract No. 457—Provided for the installation of 18 services and the laying of 500 feet of 6-inch and 170 feet of 8-inch cast iron mains in San Bruno Avenue, Goettingen and Dublin Streets. The contract was awarded to the Water Department on August 11, 1947, and was completed on September 16, 1947, at a cost of $4,993.18.

Contract No. 458—For the installation of 42 services and the laying of 580 feet of 12-inch cast iron main in Bella Vista Way between Molimo Drive and Avoca Alley. The contract was awarded to Fred T. Fairey on August 18, 1947, and was completed on September 12, 1947, at a cost of $5,199.30.

Contract No. 461—For the installation of 163 services and the laying of 2,600

ELEVATED DIVERSION FLUME AT SAN MATEO DAM No. 2, AS COMPLETED

feet of 6-inch cast iron main in 40th, 41st, 42nd Avenues, between Rivera and Taraval Streets. The contract was awarded to E. J. Treacy on September 29, 1947, and was completed on December 10, 1947, at a cost of $9,804.78.

Contract No. 462—Provided for the installation of 19 services, one 8-inch fire sprinkler service, the laying of 500 feet of 6-inch and 340 feet of 8-inch cast iron mains in Gaven Street and Treat Avenue. The contract was awarded to the Water Department on October 6, 1947, and was completed on November 20, 1947, at a cost of $3,805.21.

Contract No. 465—For the installation of 25 services and the laying of 950 feet of 6-inch main in Graystone Terrace, Villa to Corbett. The contract was awarded to Fred T. Fairey on October 6, 1947, and was completed on November 25, 1947, at a cost of $4,107.66.

Contract No. 468—For the installation of a 12-inch fire sprinkler service and the laying of 680 feet of 8-inch and 685 feet of 12-inch cast iron mains in Napoleon Street, between Evans and Jerrold Avenues. The contract was awarded to Fred T. Fairey on November 10, 1947, and was completed on February 16, 1948, at a cost of $8,971.77.

Contract No. 470—Provided for the installation of 27 services and the laying of 820 feet of 6-inch and 860 feet of 8-inch cast iron mains in the Parkside District. The contract was awarded to Fred T. Fairey on December 29, 1947, and was completed on February 10, 1948, at a cost of $7,581.20.

Contract No. 471—For the laying of 460 feet of 12-inch cast iron main in Peabody Street from Sunnyvale Avenue to the county line. The contract was awarded to E. J. Treacy on December 22, 1947, and was completed on February 13, 1948, at a cost of $4,397.32.

Contract No. 474—Provided for the installation of 11 services and the laying of 2,150 feet of 8-inch cast iron main in Barneveld and Loomis Streets, between Oakdale and Jerrold Avenues. The contract was awarded to Fred T. Fairey on March 1, 1948, and was completed on April 9, 1948, at a cost of $9,110.84.

Contract No. 475—Provided for the laying of 1,020 feet of 22-inch steel pipe in Geary Street between Lyon and Masonic Streets. The 22-inch line replaced an old 20-inch steel line which was abandoned due to the widening of Geary Street and the relocation of the street car tracks. The contract was awarded to Martin Murphy on March 1, 1948, and was completed on June 14, 1948, at a cost of $14,850.49.

Contract No. 476—For the installation of 6 services and the laying of 600 feet of 8-inch cast iron main in Mendell Street between Hudson and Jerrold Avenues. The contract was awarded to E. J. Treacy on March 8, 1948, and was completed on April 7, 1948, at a cost of $2,905.30.

Contract No. 477—For the installation of 5 services, one 8-inch fire sprinkler service and the laying of 50 feet of 6-inch and 1,540 feet of 8-inch cast iron mains in Alemany Boulevard and Custer Street. The contract was awarded to E. J. Treacy on March 29, 1948, at an estimated bid price of $8,568. The contract was 95 per cent completed on June 30, 1948.

Contract No. 479—Provides for the laying of 670 feet of 6-inch and 490 feet of 8-inch cast iron mains in Army Street from Shotwell to South Van Ness Avenue, in connection with the widening of Army Street. The contract was awarded to Fred T. Fairey on May 17, 1948, at an estimated bid price of $5,363.30. As of June 30, 1948, the contract was 30 per cent completed.

Contract No. 482—For the installation of 135 services and the laying of 4,750 feet of 6-inch, 12,000 feet of 8-inch, 3,500 feet of 12-inch and 1,500 feet of 16-inch cast iron mains in Lakeshore Subdivision No. 3 and in Sloat Boulevard. The contract was awarded to E. J. Tobin on June 7, 1948, at an estimated bid price of $59,878.85. Work on this contract had not started as of June 30, 1948.

Contract No. 483—For the installation of 112 services and the laying of 1,450 feet of 6-inch and 1,700 feet of 8-inch cast iron mains in Amherst, Princeton, University, Bacon and Wayland Streets. The contract was awarded to E. J. Treacy on May 10, 1948, at an estimated bid price of $11,894.75. As of June 30, 1948, work had not been started on this contract.

Contract No. 486—Provided for the installation of 71 services and the laying of 1,190 feet of 6-inch cast iron main in 42nd Avenue, Worcester Street and St. Charles Avenue. The contract was awarded to Fred T. Fairey on May 10, 1948, and was completed on June 14, 1948, at a cost of $5,134.78.

2. *Additions to Supply and Transmission Facilities:*

Contract No. 423—For replacing the diversion flume at San Mateo Dam No. 2, was awarded to the Metropolitan Construction Company on August 4, 1947, and was completed on February 23, 1948, at a cost of $44,690.03.

Contract No. 436—For the construction of the Irvington pump station in Alameda County. The contract was awarded to Fred J. Early Jr. Company, Inc., on March 31, 1947, and was completed on March 4, 1948, at a cost of $84,228.49.

Contract No. 452—Provided for the construction of the 60-inch Sunset Supply line from Colma to Sunset Reservoir. The contract was awarded to the M and K Corporation on August 4, 1947, and was completed on May 12, 1948, at a cost of $631,812.12.

Contract No. 456—For replacing Stone Dam Aqueduct, Section No. 1, was awarded to the Metropolitan Construction Company on July 28, 1947, and was completed on March 4, 1948, at a cost of $132,564.09.

Contract No. 466—For the construction of collecting lines at Pleasanton wells and the relocation of a portion of the Pleasanton pipe line was awarded to M. J. Lynch on October 20, 1947, and was completed on December 31, 1947, at a cost of $26,537.03.

Contract No. 472—Provided for the rehabilitation of the Sunol distribution system. The contract was awarded to E. T. Haas Company on March 1, 1948, and was completed on June 30, 1948, at a cost of $9,619.07.

Contract No. 478—Provides for the construction of the 60-inch Sunset supply line from Baden to Colma. The contract was awarded to McGuire and Hester on April 12, 1948, at an estimated bid price of $319,895.00. The contract was 22 per cent completed as of June 30, 1948.

Contract No. 485—For the construction of a crossing at Lake Merced for the 60-inch Sunset supply line. The contract was awarded to the M and K Corporation on June 21, 1948, at an estimated bid price of $65,912.00. As of June 30, 1948, work had not been started on the contract.

3. *Miscellaneous Contracts:*

Contract No. 451—For the making of alterations of the fifth floor of the San Francisco Water Department Building at 425 Mason Street. The contract was awarded to the Bert Construction Company on July 21, 1947. The contract was completed by the United Pacific Insurance Company on December 17, 1947, at a cost of $14,299.60.

Contract No. 454—Covering the repaving of streets and sidewalk openings made by the department for installation or repair work during the fiscal year 1947-48. The contract was awarded to the Pacific Pavements Company, Ltd., on June 30, 1947, and terminated June 30, 1948. Payments under the contract amounted to $52,688.10. Repavement over trenches opened by other contractors performing work for the department is not included under this annual paving contract, as each contractor must provide his own paving.

Contract No. 463—Provided for the repaving of roadways at the Sunol Headquarters of the Water Department. The contract was awarded to Clements and Company on October 14, 1947, and was completed on December 8, 1947, at a cost of $4,321.65.

Contract No. 469R—For the remodeling of the Millbrae pump station was awarded to N. O. Wiseth on January 12, 1948, at an estimated bid price of $22,354.00, and the contract was later modified to total $24,332.00. As of June 30, 1948, the contract was 92 per cent completed.

B. *Informal Contracts:*

The following jobs involving less than $2,000, were done under a work order issued after posting a notice of invitation for bids and the receipt of informal bids.

Informal Bid No. 79—For construction of a fence at the Baden pump station lot,

was awarded to the Cyclone Fence Division of American Wire and Steel Company and the work completed on October 17, 1947, at a cost of $1,281.05.

Informal Bid No. 80—Covered the making of alterations for enlarging Room 701 in the Water Department Building, 425 Mason Street, San Francisco. The contract was awarded to N. O. Wiseth and the work was completed on May 20, 1948, at a cost of $957.00.

Informal Bid No. 81—For painting of portions of the sixth and seventh floors of the Water Department building, 425 Mason Street, San Francisco, was awarded to Deemer and Deemer and the work completed on May 24, 1948, at a cost of $935.00.

AGRICULTURAL DIVISION

On July 1, 1948, the area of land owned in fee was 63,527.071 acres, which was 75.627 acres less than the acreage shown in the last annual report. This decrease is made up as follows:

	Acres	Acres
Purchases:		
Land for Sunset Supply Line:		
Lots and/or portions of Seventy-Five Dollar Lot Homestead Association in San Mateo County identified as follows:		
Block 8, Lots, 12, 13, 14, 35, 36, 37 and 38		.156
Land for Crystal Springs Pipe Line No. 2:		
Purchased from Meadow Glenn Subdivision, Millbrae to Burlingame:		
Block 5, Lot 13—Block 6, Lots 18 and 44		.067
Sales:		
Parcel 52, Alameda County, sold to Schuchl & Son	.699	
Parcel 59, Alameda Co., sold to Co. of Alameda	2.676	
Parcel 71, Alameda Co. sold to Orin & Vivian Crowe	2.46	
Parcel 65, Alameda Co., Sunol and San Antonio, sold to Roman Catholic Archbishop	.989	
Parcel 65, Alameda Co., sold to R. E. Smith	.09	
Parcel 11, San Mateo, sold to Irma Sholz	.284	
Parcel 35-39, S. F. County, Islais Creek Lots	.027	
Parcel 22, S. F. County, Balboa Reservoir Lot	2.34	
Parcel 28, San Mateo, Millbrae Reservoir Lots sold to:		
Millbrae Elementary School District	5.0	
Church of Latter Day Saints	1.5	
Roman Catholic Archbishop	34.037	
Parcels 38, 38a, San Mateo Ravenswood-Belmont sold to:		
San Mateo County Title Co.	9.4	
California Pacific Title Co.	16.348	
	75.850	.223
Total decrease in acreage		75.627

Of the above, 35,300 acres, more or less, are leased under 159 leases. Changes in the leased acreage during the year were as follows:

	Acres	Acres
Increases:		
Lease No. 1160—Serena and Armando Ferraris		.735
Lease No. 1090—John Furtado—additional acreage		.48
Lease No. 1157—Chin Hop		1.44
Lease No. 1145—Joseph Kiser		30.00
Decreases:		
Lease No. 1045—John Castagnetto	1.5	
Lease No. 1132—S. Cozzalino	24.7	
Lease No. 1120—Orrin Crowe	2.4	
Lease No. 1085—Curotto Bros.	18.	46.6
Net decrease		13.945

SUMMARY

Kind of Lease	Leased Acreage	No. of Leases	Income
Agricultural:			
Cattle	29,201.000	15	$57,014.42
Flat Rates	3,035.388	63	10,652.41
Share Crop	2,650.780	10	21,550.79
Non-Agricultural:			
Flat Rates	125.300	68	11,781.73
Taxes Paid by Tenants	.....	..	840.02
Royalties on Sale of Rock	15.000	1	28,585.86
Lake Merced Boating and Fishing	.....	1	2,700.79
Crystal Springs Golf Club	172.530	1	2,887.69
	35,199.998	159	$136,013.71
Walnut Orchard:			
Sale of Walnuts	100.000	0	16,700.11
	35,299.998	159	$152,713.82

Cattle Leases:

During the year 1947-48 there were 15 cattle leases with a total area of 29,201 acres. The rentals, however, increased 115 per cent over the base rentals, bringing an income of $57,014.42, or an increase of $11,786.85 over the previous year.

The existing cattle leases run for a period of five years from November 1, 1943, and rentals are based on a sliding scale according to sale prices of cattle during specified periods in each year, with the basic rental stipulated in each lease.

This method of basing rentals on a sliding scale is in accord with our established practice, the cattlemen paying a higher rental when cattle prices are high and a correspondingly lower amount when lower prices prevail. Cattlemen, generally seem to be agreeable to this method of adjusting rentals. High prices for beef cattle still continue and are likely to do so for some time to come owing to increased consumption at home and shipments abroad, thus indicating a probable further continuance of these higher rentals from these leases.

Rainfall was exceedingly light during the winter months, causing much concern to cattlemen in general as well as an earlier than usual movement to markets

of range cattle, so that really good top grade quality has been lacking to a large degree. Heavy sales of beef cattle and even breeding stock occurred in the winter of 1947 due to fear of both feed shortage and drought conditions.

A fortuitous change, however, for the better in feed and water conditions occurred in the spring of 1948 enabling the tenants to round out the year with little further movement of cattle to other ranges.

Most of the cattle leases were renewed by the Agricultural Division before the expiration of the existing term with material advances in rentals for the next five years.

Share Crops:

Ten leases on a share crop basis covering an area of approximately 2,674.930 acres, yielding an income of $21,550.79 for crops. Some of these leases paid a cash rental in addition to the share of crops. The principal crops raised were oats, barley, wheat and vetch hay, and barley and wheat grain, all of which were sold at good prices.

Two hundred acres of additional city lands at Sunol have been graded and leveled by a new tenant for the purpose of growing about one hundred acres of tomatoes and one hundred acres of strawberries during this tenant's six years' lease. The City receives a basic cash rent and one-quarter of the crop for the tomatoes and a straight cash rent for the strawberry land.

The 100 acres leveled, limed, fertilized and planted to strawberries show a marked growth and vigor. The clay loam soil does not require heavy irrigating and is retentive of moisture for both the strawberries and 40 acres of interplanted walnuts. The early maturing, early bearing Payne variety alternated with the reliable Franquette and Hartley Franquette walnut varieties starts the City's income five years earlier by this type of Payne interplanting. All of these are making a very satisfactory growth and in a generally backward year as far as growth is concerned.

The growing of berries between young walnut trees for the first four years of young tree growth makes a strong combination for leveling, fertilizing, cultivating and especially irrigating the City's young trees by the strawberry tenant without extra cost to the City.

Walnut Orchard:

The gross value of the walnut crop amounted to $16,700.11, a decrease of $56,317.46 over the previous year due to an off year on tonnage and price decline generally experienced on the West Coast.

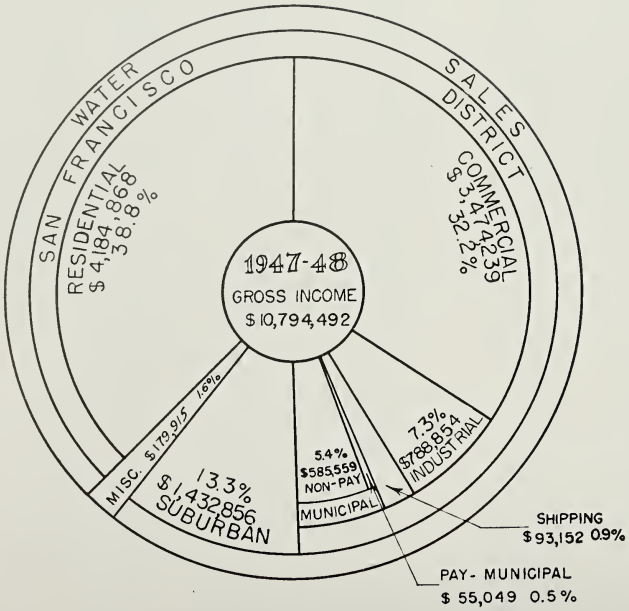
Liming of ground took the place of vetch planting for the young orchard and applied to some die-back spots in the old orchard.

This year, due to the past four dry seasons, a practical contour system was inaugurated and a heavy irrigation given the orchard.

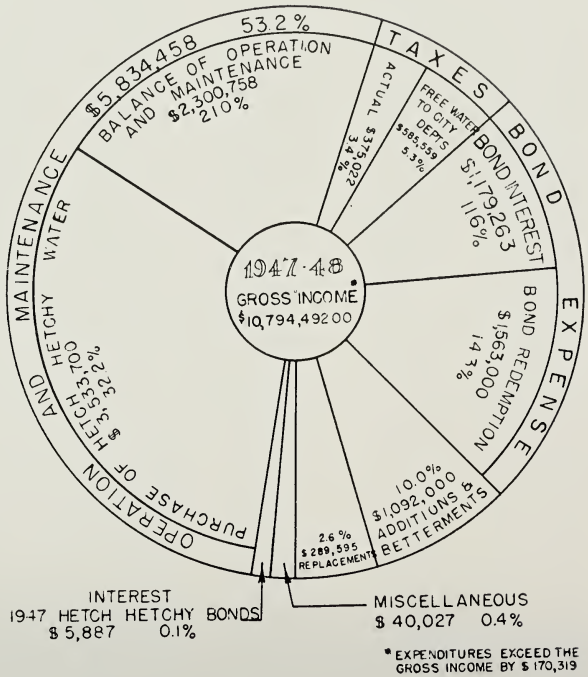
Fencing and Boundary Lines:

Fencing work on the properties was confined to the usual repairs and upkeep of boundary fences. All labor was furnished by the tenants and the material was furnished by the department.

Special fencing was placed around the 100 acres of strawberries interplanted with 40 acres of walnuts to prevent deer damage and has been most efficacious to date.



SOURCE OF INCOME
FISCAL YEAR ENDING JUNE 30, 1948



DISPOSITION OF GROSS INCOME
FISCAL YEAR ENDING JUNE 30, 1948

Care of Property:

Morning glory and mustard infestation is being considerably retarded in hay and strawberry lands, and practically eliminated in the one hundred acre walnut orchard.

Generally good cooperation is experienced between the Agricultural Division personnel and the tenants in arriving at decisions and agreements. Fertilizers to be used by the tenants on City lands needing same are discussed and agreed upon to mutual advantage.

Sanitary provision measures are strictly enforced in all leases to insure against water pollution.

WALNUT CROP AND VALUE DURING CITY OWNERSHIP

	Total Yield Pounds	Gross Value	Net Cash Received	Association Charges % of Gross*	Packing House Charges per lb.
1930	110,361	$23,905.44	$20,024.55	16.23	$.0138
1931	91,570	13,778.73	12,272.73	10.93	.0091
1932	206,795	28,994.25	20,391.18	29.67	.0070
1933	153,080	23,635.21	17,905.45	24.24	.0073
1934	136,672	18,039.52	13,236.00	26.63	.0059
1935	209,095	27,359.11	22,719.87	16.96	.0045
1936	187,605	27,865.13	24,947.57	10.47	.0046
1937	179,954	23,808.71	21,102.05	11.37	.0042
1938	258,934	36,812.05	31,801.16	13.61	.0090
1939	153,770	12,747.35	11,366.74	10.83	.0124
1940	90,148	13,570.25	11,671.08	14.00	.0100
1941	239,062	37,182.09	29,807.07	19.83	.0088
1942	254,594	45,744.85	44,000.73	3.81	.0068
1943	188,590	49,552.64	48,373.84	2.38	.0082
1944	107,831	29,487.66	26,901.72	8.77	.0138
1945	214,919	62,893.03	58,474.64	7.03	.0126
†1946	240,883	73,017.57	73,017.57	0	0
†1947	81,167	16,700.11	16,700.11	0	0
Prior Year's Adjustment	.....	3,431.54	3,431.54		
	3,105,030	$568,525.24	$508,145.60		

*Includes cost of surplus control, operating reserve and revolving fund in addition to actual Association charges for marketing expense.
†Sold under competitive bids.

ACCOUNTING AND AUDITING

The accounts of the San Francisco Water Department are maintained strictly in accordance with the requirements of the State Railroad Commission and Section 64 of the Charter, and the accounts of the Department have been so coordinated with the Controller's system that no encumbrance or expenditures against budget estimates can be incurred without prior certification from the Controller that funds are available. As provided in Ordinance 9.0621, an annual audit of the Department is made as of June 30 by a firm of certified public accountants. The accountant's report is not available at the time the Department's financial statement goes to press, hence there may be minor differences between the two reports due to reclassifications made by the accountants.

COMMENTS ON FINANCIAL STATEMENTS

An analysis of the disposition of Earned Surplus, together with additions thereto and deductions therefrom is shown in the body of these comments.

The following financial statements and cost reports are presented:

Balance Sheet June 30, 1948 (Exhibit A).

Income Statement for the years ended June 30, 1947, and June 30, 1948 (Exhibit B).

Surplus Account June 30, 1948 (Exhibits C and D).

Comparative Statement of Operating Expenses for fiscal years 1946-47 and 1947-48 (Exhibit E).

Operating Expenses for past four fiscal years (Schedules Nos. 1, 2, 3, 4 and 5).

Additions, Betterments and Replacements for fiscal year 1947-48 (Schedule No. 6).

Sales of water for the fiscal year 1947-48 were $10,614,577.04 as against $10,519,351.35 for prior year, an increase of $95,225.69.

Other Income amounts to $179,915.15 as against $210,773.60 for prior year, a decrease of $30,858.45, due to a small walnut crop which amounted to $73,897.98 in 1946 and but $16,700.11 in 1947, or a decrease of $57,197.87. This decrease is partially offset by a gain in Rents, including share crops, $28,323.90, and in Interest Earned, $1,875.12. A further loss of $3,589.60 was suffered in Miscellaneous Income.

As of July 1, 1946, the Water and Power Utilities were placed on a pay as you go basis which involved the payment to Hetch Hetchy Water Supply for purchase of water and standby charge the sum of $3,533,700.00. The amount paid to Hetch Hetchy Water Supply is in substantial compliance with Section 130 of the Charter, which provides that the rates charged by a public utility will be sufficient to render the utility self-supporting. Section 122 of the Charter provides that the Hetch Hetchy Project, when completed, shall be merged with the Water Department. Due to certain commitments made by the City to the Government of the United States, under the provisions of the Raker Act, which involves further development, the project is deemed not completed.

Following is a statement showing increases and decreases in Operating Expenses for the year under review:

Operating Expenses:

	Increase	Decrease
Source of Water Supply	$81,200.14	.....
Standby Charge and Purchase of Water	.....	$198,208.00
Pumping	112,771.89	.....
Purification	17,841.98	.....
Transmission and Distribution	56,176.59	.....
Commercial Division	37,136.75	.....
Administrative and General	52,345.28	.....
Taxes—Actual	43,330.31	.....
Provision for Depreciation	3,586.60	.....
Municipal Taxes—Comparison*	518.57	.....
Net Increase	.....	206,700.11
	$404,908.11	$404,908.11

Other Expenses decreased $85,994.25 due to the retirement of $1,563,000.00 in bonds amounting to a decrease in Interest Charges of $67,519.99, in Walnut Orchard Expense $11,608.75 due to a smaller walnut crop harvested, and other net decrease amounting to $6,865.51.

*Water services to Municipal Departments offset by taxes.

DISPOSITION OF EARNED SURPLUS

Exhibits C and D show surplus for past twelve months and composition of surplus accumulated to date. Following is a statement of the disposition of surplus arising from operations, together with additions and deductions not strictly confined thereto:

Surplus—	To June 30, 1947	Year 1947-48	To June 30, 1948
Contributed to:			
General Fund	$15,992,457.24	.....	$15,992,457.24
Hetch Hetchy Water Supply	4,472,996.10	.....	4,472,996.10
Hetch Hetchy Power	1,228.59	.....	1,228.59
1947 Hetch Hetchy Bond Fund	.....	$5,886.54	5,886.54
Appropriated for:			
Bond Redemption—Spring Valley	17,000,000.00	1,000,000.00	18,000,000.00
Bond Redemption—1933 Water Distribution	5,909,594.33	563,000.00	6,472,594.33
Additions and Betterments	11,088,480.79	1,092,000.00	12,180,480.79
Additions and Betterments—Lake Merced Project	1,250,000.00	.....	1,250,000.00
Purchase of Land	22,858.50	.....	22,858.50
Other Purposes	100,429.29	.....	100,429.29
Surplus	*817,228.33*	*170,319.23*	*987,547.56*
	$55,020,816.51	$2,490,567.31	$57,511,383.82
Add:			
Initial Earnings—Excess Earnings—Spring Valley Water Company	$4,152,652.24	.....	$4,152,652.24
Valuation Municipal Water Works	100,000.00	.....	100,000.00
Grants Earned on Federal Projects	2,358,987.60	.....	2,358,987.60
Surplus Material and Equipment from Construction Projects	381,367.16	.....	381,367.16
Land Sales—Profit	280,803.83	$113,572.70	394,376.53
Bond Premiums	821,684.38	.....	821,684.38
Palo Alto Pipe Line	304,271.90	28,000.00	332,271.90
Miscellaneous Additions	241,957.01	15,426.07	257,383.08
Bay Bridge Pump and Supply Line	120,423.26	.....	120,423.26
	$8,762,147.38	$156,998.77	$8,919,146.15
Deduct:			
Contribution to General Fund	$15,992,457.24	.....	$15,992,457.24
Deficit County Line Water Works	19,189.15	.....	19,189.15
Payment to Spring Valley Water Company for purpose of enabling City to take over Properties in Advance	745,274.31	.....	$745,274.31
Lands Contributed to City	149,599.29	$22,965.38	172,564.67
Contribution to Other Public Service Enterprises	4,477,166.10	.....	4,477,166.10
Miscellaneous Deductions from Surplus	173,693.33	26,819.72	200,513.05
Depreciation due to Revaluation	8,482,295.33	602,172.46	9,084,467.79
Depreciation not Funded (Accrued since 3/3/30)	8,093,886.34	.....	8,093,886.34
	$38,133,561.09	$651,957.56	$38,785,518.65
	$25,649,402.80	$1,995,608.52	$27,645,011.32

Italic figures denote loss and deficiency.

SAN FRANCISCO WATER DEPARTMENT

EXHIBIT A

BALANCE SHEET—JUNE 30, 1948

ASSETS

Fixed Capital:		
In Service	$74,644,828.94	
Less Provision for Depreciation	28,351,710.42	
	$46,293,118.52	
Construction in Progress	1,734,373.58	$48,027,492.10
Cash:		
Treasurer's Balance, Schedule Annexed	$5,950,461.18	
Revolving Fund	30,000.00	5,980,461.18
Accounts Receivable:		
Consumers' Accounts	$724,476.51	
Less Reserve for Losses	49,064.10	
	$675,412.41	
Other Accounts Receivable	33,968.30	709,380.71
Interfund Accounts:		
Schedule Annexed:		
Public Service Enterprises	$31,536.01	
General City and County	3,707.16	35,243.17
Deferred Charges:		
Materials and Supplies	$694,086.97	
Reserve Fund Expenditures Unbilled	247,602.60	
Misc. Jobbing and Sales Accounts, etc.	1,902.97	
Public Utilities Commission	2,961.35	946,553.89
		$55,699,131.05

LIABILITIES

Bonded Debt:		
Spring Valley Water Bonds, 1928	$23,000,000.00	
Water Distribution Bonds, 1933	3,372,000.00	
Matured, not presented for payment:		
Spring Valley, 1928	10,000.00	$26,382,000.00
Bond Interest Payable:		
Accrued, not due:		
Spring Valley Water Bonds, 1928	$517,500.00	
Water Distribution Bonds, 1933	11,240.00	
Hetch Hetchy Water Supply Bonds, 1947	5,886.54	
	$534,626.54	
Matured, not presented for payment:		
Spring Valley, 1928	$14,355.00	
Water Distribution, 1933	3,160.00	552,141.54
Accounts Payable:		
Warrants Outstanding:		
Schedule Annexed	$284,578.33	
Consumers' Deposits and Advances	269,463.41	
General Creditors	293,586.42	
Accrued Payroll	2,669.34	850,297.50
Interfund Accounts:		
Schedule Annexed:		
Public Service Enterprises	$48,747.66	
General City and County	65,818.63	114,566.29
Deferred Credits:		
Reserve for Compensation Insurance	$70,344.38	
Reserve for Unpaid Revolving Fund Checks	4,188.04	
Other Deferred Credits	80,581.98	155,114.40
Surplus:		
Schedule Annexed		27,645,011.32
		$55,699,131.05

SAN FRANCISCO WATER DEPARTMENT

EXHIBIT B—INCOME ACCOUNT

Twelve Months Ending June 30, 1948 and 1947

	Twelve Months Ending June 30		Increase or	Cumulation from March 3, 1930 to
	1948	1947	*Decrease*	June 30, 1948
Sale of Water:				
San Francisco	$8,541,113.48	$8,572,565.32	*$31,451.84*	$121,676,867.40
Outside of San Francisco	1,432,855.61	1,307,126.06	125,729.55	10,682,754.60
Municipal Departments—Actual	55,048.86	54,619.45	429.41	1,081,919.62
Municipal Departments—Comparison*	585,559.09	585,040.52	518.57	8,142,076.22
	$10,614,577.04	$10,519,351.35	$95,225.69	$141,583,617.84
Operating Expenses:				
Source of Water Supply	$338,389.57	$257,189.43	$81,200.14	$4,641,215.30
Standby Charge and Purchase of Water	3,533,700.00	3,731,908.00	*198,208.00*	11,345,277.00
Pumping	355,987.34	243,215.45	112,771.89	4,578,040.98
Purification	100,927.16	83,085.18	17,841.98	1,082,995.09
Transmission and Distribution	559,871.44	503,694.85	56,176.59	6,098,810.97
Commercial Division	563,501.68	526,364.93	37,136.75	6,931,588.98
Administrative and General	378,480.44	326,135.16	52,345.28	5,459,427.01
Taxes—Actual	375,022.57	331,692.26	43,330.31	4,816,526.34
Provisions for Doubtful Accounts	3,600.00	3,600.00	.....	228,937.07
Provisions for Depreciation	891,767.46	888,180.86	3,586.60	19,155,277.67
Municipal Taxes—Comparisons*	585,559.09	585,040.52	518.57	8,158,314.94
	$7,686,806.75	$7,480,106.64	$206,700.11	$72,496,411.35
Profit from Operations	$2,927,770.29	$3,039,244.71	*$111,474.42*	$69,087,206.49
Other Income:				
Rentals, including Crop Shares	$136,013.71	$107,689.81	$28,323.90	$1,222,018.60
Interest Earned	9,375.08	7,499.96	1,875.12	400,772.33
Sale of Walnuts	16,700.11	73,897.98	*57,197.87*	568,525.24
Miscellaneous	17,826.25	21,685.85	*3,859.60*	179,850.48
	$179,915.15	$210,773.60	*$30,858.45*	$2,371,166.65
Other Expenses:				
Bond Interest	$1,179,263.34	$1,246,783.33	*$67,519.99*	$30,531,851.37
Agricultural Division	19,896.31	18,241.17	1,655.14	268,984.39
Walnut Orchard Expense	18,900.64	30,509.39	*11,608.75*	354,610.68
Miscellaneous	1,230.30	9,750.95	*8,520.65*	70,379.34
	$9,290.59	$1,305,284.84	*$85,994.25*	$31,225,825.78
Net Income	$1,888,394.85	$1,944,733.47	*$56,338.62*	$40,232,547.36

*Water Service to Municipal Departments offset by Municipal Taxes.

Italic figures denote loss and deficiency.

SAN FRANCISCO WATER DEPARTMENT
EXHIBIT C—SURPLUS ACCOUNT
For Twelve Months Ending June 30, 1948

Surplus—June 30, 1947		$25,649,402.80
Add:		
Net Income for 12 months ending June 30, 1948	1,888,394.85	
Miscellaneous Additions to Surplus	156,998.77	$27,694,796.42
Deduct:		
Contribution to General Fund—Transfer of Francisco Reservoir Lot	$22,965.38	
Miscellaneous Deductions from Surplus	26,819.72	49,785.10
Surplus—June 30, 1948		$27,645,011.32

SAN FRANCISCO WATER DEPARTMENT
EXHIBIT D
COMPOSITION OF SURPLUS—CONDENSED
JUNE 30, 1948

Initial Surplus—March 3, 1930:			
Amortization Contribution (Spring Valley)	$4,152,652.24		
Valuation of Municipal Water Works	100,000.00		
	$4,252,652.24		
Less: Additional Allowance for Depreciation, March 1, 1920 to March 3, 1930	—2,327,916.67	$1,924,735.57	
Additions:			
Net Profit—March 3, 1930 to June 30, 1948	$40,232,547.36		
Miscellaneous and Year to Year Adjustments	4,301,870.35	44,534,417.71	
Grants earned on Federal Public Works Projects		2,358,987.60	
Year to year—Additions to Surplus to June 30, 1944		1,462,481.49	$50,280,622.37
Deductions:			
Contributions to General Fund		$15,992,457.24	
Contributions to 1947 Hetch Hetchy Water Bond Fund	$5,886.54		
Contributions to Hetch Hetchy Water Supply	4,472,999.10		
Contributions to Hetch Hetchy Power Division	1,228.59	4,480,114.23	
Lands Contributed:			
To City and County of S. F. for Streets and Boulevards		172,564.67	
Excess of Adjusted Book Value of Plant Appraisal December 31, 1937		1,990,474.91	22,635,611.05
Surplus—June 30, 1948			$27,645,011.32

SAN FRANCISCO WATER DEPARTMENT
EXHIBIT E
COMPARATIVE STATEMENT OF OPERATING EXPENSES
For the Fiscal Years Ended June 30, 1948 and June 30, 1947

	Fiscal Year Ended June 30 1948	1947
Source of Water Supply Expenses:		
Superintendence	$39,244.62	$38,411.49
Operating Labor	57,084.89	52,338.72
Operating Supplies and Expenses	20,946.28	12,096.84
Repairs and Maintenance—Buildings, Fixtures and Grounds	153,900.68	106,335.76
Repairs—Surface Facilities	67,213.10	48,006.62
	$338,389.57	$257,189.43
Pumping Expenses:		
Labor—Pumping	$73,001.69	$66,189.85
Labor—Miscellaneous	209.40	1,434.06
Fuel for Steam	48,687.22	30,613.73
Power Purchased	194,048.25	125,567.68
Lubricants	199.01	35.39
Miscellaneous Supplies and Expense	15,930.96	2,299.25
Repairs—Primary Pumping Equipment	13,255.14	7,697.91
Repairs—Boilers and Equipment	659.46	340.49
Repairs—Miscellaneous Equipment	5,693.38	2,652.69
Other Repairs and Gardening	4,302.83	6,384.40
	$355,987.34	$243,215.45
Purification Expenses:		
Superintendence and Labor	$37,503.62	$33,512.51
Supplies and Expense	59,261.47	45,626.96
Repairs—Plant, Structures and Equipment	3,834.56	2,886.59
Repairs and Maintenance—Roads and Trails	327.51	1,059.12
	$100,927.16	$83,085.18
Transmission and Distribution Expense:		
Superintendence	$54,335.64	$49,853.69
Patrolling Storage Facilities	20,472.13	17,199.59
Meters and Fittings Department	80,368.50	61,368.80
Street Department	23,045.85	21,902.69
Consumers' Premises Expenses	27,146.67	27,049.75
Miscellaneous Supplies and Expenses	16,597.39	9,806.13
Repairs—Transmission Mains and Canals	42,446.89	42,589.40
Repairs—Reservoirs, Tanks and Standpipes	3,333.30	3,607.28
Repairs—Distribution Mains and Canals	123,401.95	118,872.73
Repairs—Service Connections	123,552.34	119,388.39
Repairs—Distribution Buildings and Grounds	34,820.20	27,889.12
Repairs—Distribution Equipment	9,265.49	4,167.28
Reconstruct and Relocate Pipe Lines	1,085.09	.....
	$559,871.44	$503,694.85

EXHIBIT E—(Continued)

	Fiscal Year Ended June 30 1948	1947
Commercial Expenses:		
Collections	$154,133.75	$149,576.68
Reading Meters	83,179.95	73,415.24
Bookkeeping Department	165,276.57	159,476.20
General	64,523.80	55,436.98
Inspection and Service	71,761.71	63,850.30
Shipping	24,625.90	24,609.53
	$563,501.68	$526,364.93
Administrative and General Expense:		
Salaries—General Officers	$19,323.32	$18,686.77
Salaries—General Office Clerks	56,756.11	57,822.76
Miscellaneous Supplies and Expenses	28,695.72	8,508.21
Injuries and Damages	5,182.79	3,147.44
Retirement System Contributions	75,542.50	42,270.66
Mason Street Building Expense	30,941.38	28,733.45
Telephone Service	23,493.98	19,133.23
Guest Cottages and Rest Room	2,998.78	1,822.87
General Engineering	50,065.08	56,759.82
Hydrography	1,078.97	1,334.86
Miscellaneous	2,021.38	14,176.98
Compensation Insurance	10,674.50	9,480.89
Other Insurance	8,624.43	6,500.10
Repairs—Mason Street Building	5,155.09	4,906.00
Repairs—Telephone System	10,254.22	11,110.42
Professional Services	5,000.00	3,100.00
Public Utility Commission Expense	42,672.19	38,640.70
Property Taxes (Outside of San Francisco)	375,022.57	331,692.26
	$753,503.01	$657,827.42

SAN FRANCISCO WATER DEPARTMENT
SCHEDULE No. 1
OPERATING EXPENSES

RESERVOIRS AND SOURCES	1944-45	1945-46	1946-47	1947-48
Inside of San Francisco:				
Lake Merced	$3,832.42	$3,580.67	$4,884.92	$4,595.16
Other Supply Lines	419.47	.....	.....	.....
	$4,251.89	$3,580.67	$4,884.92	$4,595.16
Outside of San Francisco:				
Surface Sources				
San Andres Reservoir	$16,480.08	$12,217.08	$16,737.26	$18,931.31
Crystal Springs Reservoir	26,488.18	38,072.03	38,631.50	47,274.77
Pilarcitos Reservoir	19,923.92	43,185.50	15,151.75	21,456.09
Calaveras Reservoir	9,760.13	9,670.68	10,572.42	14,664.80
	$72,652.31	$103,145.29	$81,092.93	$102,326.97
Ground Sources				
Sunol Filter Beds	$6,798.00	$7,706.45	$6,639.12	$14,673.85
Pleasanton Wells	484.18	224.41	1,002.78	9,544.51
	$7,282.18	$7,930.86	$7,641.90	$24,218.36
Supply Lines and Aqueducts:				
Bay Division Pipe Lines	$21,732.57	$8,177.38	$39,378.09	$52,729.93
Stone Dam Aqueduct	2,811.19	1,335.56	7,386.40	12,137.85
Niles-Irvington Pipe Line	1,704.28	2,350.10	3,056.20	2,787.69
Upper Alameda Tunnel	.....	.....	.....	.....
Upper Alameda Creek Diversion Dam	696.33	1,200.03	.....	.....
Calaveras Pipe Line	797.86	534.35	.....	.....
Other Supply Lines and Aqueducts	580.72	1,501.87	2,620.23	4,897.83
	$28,322.95	$15,099.29	$52,440.92	$72,553.30
Alameda System—General Expenses	20,763.71	22,332.51	26,602.91	28,112.19
Peninsula System—General Expenses	54,567.78	65,143.91	84,525.85	106,583.59
	$75,331.49	$87,476.42	$111,128.76	$134,695.78
Total Source of Supply Expense	$187,840.82	$217,232.53	$257,189.43	$338,389.57

SAN FRANCISCO WATER DEPARTMENT

SCHEDULE No. 2

OPERATING EXPENSES

PUMP STATIONS	1944-45	1945-46	1946-47	1947-48
Inside of San Francisco:				
Steam Plants				
Central	$60,489.89	$63,066.18	$77,853.55	$95,926.35
City	143.94	22.46	637.56	43.48
Clarendon Heights	495.35	564.36	473.70	630.70
Ocean View	133.20	.....	.....	.....
	$61,262.38	$63,653.00	$78,964.81	$96,600.53
Electric Pumps				
Francisco Street	.....	.....	.....	$9,119.51
Alemany	$40,271.20	$631.83	$23,706.90	48,356.44
Bay Bridge Pump—Treasure Island	14,478.28	13,561.24	9,142.52	7,590.99
Daly Hill	.....	.....	176.06	2.40
Forest Hill	8,781.71	5,808.72	6,233.20	6,449.05
Potrero Heights	343.97	365.90	271.18	485.23
Newcomb Avenue	4,608.94	5,089.30	5,421.77	5,879.16
Hillside	223.95	271.55	414.79	58.74
Fairview	757.31	2,225.80	604.73	687.09
Lincoln Park	372.31	386.58	750.35	1,180.33
Palo Alto	.....	.....	111.47	383.91
Twin Peaks	470.13	617.38	712.29	597.30
Lake Honda Booster	55.84	.....	.....	388.20
Sunset Booster	36.55	404.49	448.59	604.51
Sunset Source	40.37	45.93	101.52	.....
Olmstead and University	665.00	722.43	732.53	1,417.62
Bernal Heights	624.21	342.92	372.15	402.89
St. Germain	290.61	374.25	908.48	27.79
General	311.00	1,029.46	539.90	869.27
	$72,331.38	$31,877.78	$50,648.43	$84,500.43
Total Inside of San Francisco	$133,593.76	$95,530.78	$129,613.24	$181,100.96
Outside of San Francisco:				
Baden	$58,167.17	$39,334.84	$6,598.86	$3,854.98
Belmont Pump	1,148.86	41.87	.....	.....
Millbrae Pump	.....	119.74	.....	.....
Crystal Springs Pump	65,762.50	91,033.38	102,347.97	134,732.10
Bay Division Pump	3,199.44	2,667.23	1,883.56	2,108.75
Pleasanton Pump	667.55	687.04	959.98	7,405.88
Pleasanton Township Water District	909.75	900.00	1,811.84	2,039.70
Irvington Pump	.....	.....	.....	24,744.97
San Lorenzo Pump	350.35	67.58	.....	.....
Total Outside of San Francisco	$130,205.62	$134,851.68	$113,602.21	$174,886.38
Total Pumping Expenses	$263,799.38	$230,382.46	$243,215.45	$355,987.34

SAN FRANCISCO WATER DEPARTMENT
SCHEDULE No. 3
OPERATING EXPENSES

PURIFICATION EXPENSES	1944-45	1945-46	1946-47	1947-48
Inside of San Francisco:				
College Hill	$1,006.19	$975.75	$1,069.34	$1,387.69
Lake Honda	50.01	31.95	4.12	14.54
Lombard Street	58.98	60.82	67.37	289.06
Sunset	155.27	174.16	207.63	161.08
University Mound	1,075.89	1,251.26	1,051.80	751.60
Lake Merced	428.57	42.64	147.17	442.49
Total Inside of San Francisco	$2,774.91	$2,536.58	$2,547.43	$3,046.46
Outside of San Francisco:				
San Andres Reservoir	$4,163.66	$3,557.27	$4,504.78	$5,937.73
Crystal Springs Reservoir	11,054.98	6,837.14	6,918.83	13,900.84
Calaveras Reservoir	15,828.43	14,338.92	14,211.36	15,667.98
Sunol Purification System	751.92	925.44	905.20	1,461.99
Other Outside Stations	1,715.99	204.94	477.17	441.49
Coast Range Division, H. H. W. S.	15,044.76	17,825.20	17,084.43	23,266.78
Millbrae Laboratory	26,195.14	35,834.50	36,435.98	37,203.89
Total Outside of San Francisco	$74,754.88	$79,523.41	$80,537.75	$97,880.70
Total Purification Expenses	$77,529.79	$82,059.99	$83,085.18	$100,927.16

SAN FRANCISCO WATER DEPARTMENT
SCHEDULE No. 4
OPERATING EXPENSES

TRANSMISSION AND DISTRIBUTION	1944-45	1945-46	1946-47	1947-48
Inside of San Francisco:				
City Transmission Lines	$1,678.37	$203.13	$2,784.19	$5,614.17
Reconstruct and Relocate Pipe Lines	.....	.....	.....	1,085.09
City Distribution Reservoirs	35,076.43	31,794.44	39,426.37	46,816.16
Meter Expenses	46,602.31	41,576.76	49,167.73	65,589.71
Street Department Expenses	20,556.41	19,851.36	21,902.69	23,045.85
Main Repairs	74,790.13	97,894.67	118,785.40	123,342.90
Service Connection Repairs	79,168.21	87,946.87	119,388.39	123,552.34
Repairs to Buildings and Equipment	2,903.54	2,245.60	4,167.28	9,265.49
Operation of Corporation Yard	110.21	356.10	8,291.39	14,541.72
Consumers' Premises Expenses	22,197.08	22,917.27	27,049.75	27,146.67
Superintendence	35,897.46	44,664.13	49,853.69	54,335.64
Total Inside of San Francisco	$318,980.15	$349,450.33	$440,816.88	$494,335.74
Outside of San Francisco:				
Alameda Supply Line—Alameda Division	$1,092.46	$306.47	$479.00	$1,271.90
Alameda Supply Line—Peninsula Division	251.71	1,011.77	347.64	482.35
Alameda Transmission Line	6,727.70	5,981.05	11,970.02	9,041.15
San Andres Aqueduct	1,153.54	.....	.....	.....
Crystal Springs Pump Aqueduct	4,045.05	5,113.79	5,892.67	5,042.09
New Crystal Springs Transmission Line	3,770.52	5,105.75	9,385.35	6,765.35
Old Crystal Springs Transmission Line	6,436.96	5,331.70	7,536.34	7,986.73
San Andres Transm. Line No. 1, to College Hill	1,634.40	1,042.94	6,932.61	5,476.16
San Andres Transm. Line No. 2, to Lake Honda	4,393.64	2,691.89	2,713.93	6,384.14
San Andres Transm. Line No. 3, to Merced Manor	1,687.11	1,692.08	1,697.53	3,097.96
Palo Alto Pipe Line	.....	62.35	71.82	15.11
Niles Regulating Reservoir	3,054.40	3,421.90	3,476.99	3,682.20
Pleasanton Transmission Line	27.57	2.97	173.00	1,511.77
Meter Expense, Peninsula Division	5,579.70	8,722.39	12,041.64	14,555.59
Meter Expense, Alameda Division	.....	.....	159.43	223.20
Total Outside of San Francisco	$39,854.76	$40,487.05	$62,877.97	$65,535.70
Total Transmission and Distribution Expenses	$358,834.91	$389,937.38	$503,694.85	$559,871.44

SAN FRANCISCO WATER DEPARTMENT
SCHEDULE No. 5
OPERATING EXPENSES

	1944-45	1945-46	1946-47	1947-48
Commercial Expenses:				
Collections	$126,394.84	$129,817.84	$149,576.68	$154,133.75
Reading Meters	53,491.09	61,478.76	73,415.24	83,179.95
Bookkeeping Department	127,380.30	132,104.12	159,476.20	165,276.57
General and Miscellaneous	50,583.58	55,338.83	55,436.98	64,523.80
Inspection and Service	50,455.22	53,944.38	63,850.30	71,761.71
Shipping	17,519.79	19,639.84	24,609.53	24,625.90
	$425,824.82	$452,323.77	$526,364.93	$563,501.68
General and Miscellaneous:				
Salaries of General Officers	$13,261.53	$13,552.88	$18,686.77	$19,323.32
Salaries of General Office Clerks	51,242.18	46,864.51	57,822.76	56,756.11
Miscellaneous Supplies and Expense	2,739.28	4,094.32	8,508.21	28,695.72
Public Utilities Commission Expenses	47,101.00	61,792.00	38,640.70	42,672.19
General Engineering	47,651.34	50,461.03	56,759.82	50,065.08
Hydrography	1,587.38	1,574.64	1,334.86	1,078.97
Telephone Services	14,826.34	15,949.98	19,133.23	23,493.98
Mason Street Building Operations	25,713.25	26,862.65	28,733.45	30,941.38
Rest Room and Guest Cottages	1,566.73	1,487.73	1,822.87	2,998.78
Advisory and Consulting Expenses	2,600.00	2,417.71	3,100.00	5,000.00
Repairs—Mason Street Building	9,863.81	8,983.76	4,906.00	5,155.09
Repairs—Telephone System	8,959.28	9,381.23	11,110.42	10,254.22
Repairs—Extraordinary—Move Employees' Cottage—Belmont	.....	.....	7,558.69	.....
Cleanup Non-Operative Property	. ... .	.....	5,562.29	1,452.88
	$227,112.12	$243,422.44	$263,680.07	$277,887.72
Other Operating Expenses:				
Insurance—Compensation	$8,856.40	$8,096.93	$9,480.89	$10,674.50
Insurance—Other	6,407.84	5,017.23	6,500.10	8,624.43
Injuries and Damages	2,785.65	3,046.27	3,147.44	5,182.79
Pensions	42,878.05	41,738.63	42,270.66	75,542.50
Property Taxes	240,444.01	267,213.15	331,692.26	375,022.57
Miscellaneous—General	1,036.69	216.00	1,056.00	568.50
Emergency Civilian Defense	120,712.60	6,112.59	.....	.....
	$423,121.24	$331,440.80	$394,147.35	$475,615.29
	$650,233.36	$574,863.24	$657,827.42	$753,493.01

SAN FRANCISCO WATER DEPARTMENT

SCHEDULE No. 6

ADDITIONS, BETTERMENTS AND REPLACEMENTS

Acct. No.	Contract No.	Name	Retirements	Additions	Engineering Office	Engineering Field	Force Account	Contracts	Materials and Supplies	Contractual Service	Equipment	Miscellaneous
1015		Landed Capital										
		Purchase of Land	.....	$135,576.35	.....	.....	.....	.....	$5,338.00	$5,331.30	.....	$124,907.05
		Sale of Land	$109,333.59	.....	.....	.....	.....	.....	.....	.....	.....	.....
1020	407	Grade Univ. Mound Lots	.....	$7,103.09	.....	$913.91	.....	$6,189.18	.....	.....	.....	.....
	411 ABC	Lincoln Park Pump Bldg.	.....	7,916.32	.....	511.89	$3,623.64	1,635.00	$1,006.03	$200.00	$939.76	.....
	436	Irvington Pump Station	.....	106,360.04	.....	8,113.31	.....	97,779.21	.....	306.42	161.10	.....
	440	Storage Bldg. Millbrae	.....	10,260.66	.....	155.32	.....	8,612.00	1,493.34	.....	.....	.....
	442-445	Fence Univ. Mound Lots	.....	4,713.03	$129.05	193.96	.....	4,390.02	.....	.....	.....	.....
	443	Improve Van Ness Ave.	.....	3,841.31	.....	106.60	.....	3,623.00	.....	111.71	.....	.....
	447	Grade 28th Ave. bet. P & Q	.....	3,584.14	81.46	134.93	.....	3,367.75	.....	.....	.....	.....
		Other Structures	.....	1,366.80	.....	.....	.....	.....	85.75	1,281.05	.....	.....
		Total Bldg. Structures & Grounds	.....	$145,145.39	$210.51	$10,129.92	$3,623.64	$125,596.16	$2,585.12	$1,899.18	$1,100.86	.....
1025	337	San Andres Out. No. 3 Adits, etc.	.....	$425,101.91	$1,779.93	$56,425.46	.....	$351,422.78	$2,323.46	$292.54	$12,857.74	.....
	385	Bald Hill Outlet	.....	51,574.66	.....	.....	.....	48,337.71	.....	.....	3,236.95	.....
	410	San Andres Outlet No. 3 Pipes	.....	310,654.74	13,180.86	12,409.71	.....	285,064.17	.....	.....	.....	.....
	423	San Mateo Dam—Divers'n Flume	.....	48,297.68	.....	3,607.65	.....	44,690.03	.....	.....	.....	.....
	456	Stone Dam Aqueduct	.....	149,962.47	6,566.50	10,831.88	.....	132,564.09	.....	.....	.....	.....
		Other Structures	$28,369.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
			.....	$985,591.46	$21,527.29	$83,274.70	.....	$862,078.78	$2,323.46	$292.54	$16,094.69	.....
1030		Pumping Station Equipment	$807.25	$7,312.63	.....	.....	.....	.....	.....	.....	$7,312.63	.....
1035	409	Chlorinating Bldg. Univ. Md.	.....	4,446.39	$116.57	.....	$1,052.82	$3,277.00	.....	.....	.....	.....
		Other Structures	96.00	6,957.49	.....	.....	.....	.....	.....	.....	6,957.49	.....
		Total Purification Capital	.....	$11,403.88	$116.57	.....	$1,052.82	$3,277.00	.....	.....	$6,957.49	.....
1040		C. I. Mains under $2,000	.....	$48,131.44	.....	.....	48,131.44	.....	.....	.....	.....	.....
		C. I. Mains over $2,000	.....	297,798.63	$1,377.60	$6,211.60	12,398.45	137,331.98	$146,469.33	.....	.....	*$5,990.33*
		Install Meters	.....	86,379.88	.....	.....	86,379.88	.....	.....	.....	.....	.....
		Install Services	.....	62,751.46	.....	.....	62,751.46	.....	.....	.....	.....	.....
		Install Gate Valves	.....	4,151.26	.....	.....	4,151.26	.....	.....	.....	.....	.....
		Other Structures	$15,730.95	1,841.83	.....	.....	.....	.....	.....	.....	$1,841.83	.....
		Total Transm. & Distribution	.....	$501,054.50	$1,377.60	$6,211.60	$213,812.49	$137,331.98	$146,469.33	.....	$1,841.83	*$5,990.33*
1045		General Equipment	$2,579.80	$27,492.34	.....	.....	.....	.....	.....	.....	27,492.34	.....
1046		Automobile Equipment	37,088.53	89,126.87	.....	.....	.....	.....	.....	.....	89,126.87	.....
			$194,005.12	$1,902,703.42	$23,231.97	$99,616.22	$218,488.95	$1,128,283.92	$156,715.91	$7,523.02	$149,926.71	$118,916.72

*Sprinkler Service charged to customer.

Italic figures denote loss and deficiency.

APPENDIX
TO
REPORT OF SAN FRANCISCO WATER DEPARTMENT

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WATER PRODUCTION DIVISION

Table No. 1 Maximum and Minimum Storage
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CITY DISTRIBUTION DIVISION

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Table No. 8 Valve Record

ENGINEERING DIVISION

Table No. 9 Contract Data

TABLE No. 1
MAXIMUM AND MINIMUM STORAGE
(Exclusive of Hetch Hetchy Sources)
MILLION GALLONS

	1944-45		1945-46		1946-47		1947-48	
	Max. April 15	Min. Jan. 30	Max. April 10	Min. Nov. 18	Max. April 9	Min. Feb. 8	Max. as of May 8	Max. as of June 30
Calaveras	31,675	17,119	24,189	13,689	14,270	14,568	5,111	4,562
Crystal Springs	15,881	18,338	19,257	18,059	18,816	17,232	16,344	15,771
San Andres	3,945	363	6,028	5,730	4,915	5,273	6,143	5,859
Pilarcitos	803	348	611	444	572	423	875	684
Lake Merced	2,615	2,612	2,624	2,486	2,621	2,618	2,609	2,562
City Reservoirs	279	292	285	297	289	278	252	268
Totals	55,198	39,072	52,994	40,705	41,583	40,392	31,334	29,706

TABLE No. 2
WATER DRAWN FROM HETCH HETCHY AND AUXILIARY SOURCES
MILLION GALLONS

	1944-45	1945-46	1946-47	1947-48
Hetch Hetchy Water Supply	17,761	18,616	22,594	22,840
Pleasanton Wells and Sunol Filters	3*	0	0	2,180
Sunset Wells	0	0	0	0
Totals	17,764	18,616	22,594	24,020

*From Pleasanton Wells. For Local consumption only.

TABLE No. 3
CONSUMPTION IN MILLION GALLONS PER DAY

Year	San Francisco	Suburban	Total System	Max. Day	Min. Day	Max. Month	Min. Month
1930-31	49.2	3.1	52.3	66.7	41.3	57.8	47.0
1931-32	49.3	2.8	52.1	65.6	39.6	59.4	47.5
1932-33	46.4	2.7	49.1	60.4	39.9	54.3	44.6
1933-34	47.3	2.6	49.9	64.3	39.1	53.7	45.1
1934-35	48.1	2.4	50.5	65.4	41.3	58.1	46.2
1935-36	52.3	2.5	54.8	68.0	43.0	62.1	50.3
1936-37	55.1	3.4	58.5	70.7	45.7	63.8	51.8
1937-38	53.3	5.0	58.3	72.4	46.7	65.4	53.4
1938-39	56.2	6.4	62.6	84.6	48.5	77.5	54.8
1939-40	59.6	9.0	68.6	89.5	51.6	76.6	60.9
1940-41	60.7	7.3	68.0	90.0	52.0	77.9	60.6
1941-42	63.5	7.7	71.2	94.5	53.1	85.7	61.7
1942-43	69.2	8.6	77.8	106.9	60.2	92.3	68.6
1943-44	76.1	11.4	87.5	109.9	70.4	101.1	76.8
1944-45	79.0	17.9	96.9	134.9	74.7	116.5	85.2
1945-46	83.7	17.2	100.9	131.9	72.9	115.3	88.0
1946-47	83.3	18.6	101.9	135.6	76.5	117.0	86.2
1947-48	81.3	19.7	101.0	138.3	74.2	122.6	88.0

TABLE No. 4
AVERAGE DAILY CONSUMPTION SINCE 1865

Year	M.G.D.	Year	M.G.D.	Year	M.G.D	Year	M.G.D.
1865	2.4	1885	17.0	1905	34.9	1925	42.6
1870	6.0	1890	20.4	1910	35.6	1928	50.1
1875	11.7	1895	19.9	1915	42.6	1929	52.1
1880	12.7	1900	25.5	1920	36.2	1930	52.1

TABLE No. 5
DELIVERY THROUGH PIPE LINES IN MILLION GALLONS DAILY

	1944-45	1945-46	1946-47	1947-48
Water transported into San Francisco:				
San Andres 54″ Pipe Line	17.3	32.2	29.6	25.7
College Hill 30″ Supply Line	7.3	7.2	7.3	7.3
Baden-Merced Branch 30″ Pipe	10.0	9.8	8.8	8.3
Crystal Springs 44″ Pipe	16.1	12.8	10.5	9.8
Crystal Springs 60″ Pipe	28.3	21.7	27.1	30.2
Total San Francisco Consumption	79.0	83.7	83.3	81.3
Water transported from Crystal Springs to San Andres Reservoir:				
Crystal Springs Pump Aqueduct	21.6	32.1	34.6	40.0
Water transported across S. F. Bay:				
Bay Division 60″ and 66″ Pipes	84.8	100.8	98.5	96.8
Alameda 36″ Pipe	0.0	0.0	0.0	0.0

TABLE No. 6

SOURCE OF WATER TRANSPORTED ACROSS SAN FRANCISCO BAY YEARLY AVERAGE MILLION GALLONS DAILY

	1944-45	1945-46	1946-47	1947-48
Pleasanton Wells and Sunol Filters.....	0.0	0.0	0.0	5.9
Calaveras Reservoir	37.3	50.1	36.5	29.1
Hetch Hetchy Water Supply.....	47.5	50.7	62.0	61.8
Totals	84.8	100.8	98.5	96.8

TABLE No. 7

PIPE RECORDS FOR 1947-48
CITY DISTRIBUTION SYSTEM

Wrought Iron and Steel Pipe

Size	Total Pipe in Ground July 1, 1947	Pipe Laid 1947-48	Removed or Abandoned 1947-48	Total Pipe in Ground June 30, 1948
¾"	12,283′	0′	80′	12,203′
1"	42,501	139	1,079	41,561
1¼"	3,928	0	0	3,928
1½"	176,102	24	100	176,026
2"	301,676	324	2,871	299,129
3"	28,024	0	550	27,474
4"	3,979	0	0	3,979
5"	804	0	0	804
6"	3,809	0	0	3,809
12"	6,555	0	0	6,555
13"	456	0	0	456
16"	25,587	0	0	25,587
20"	65,728	0	998	64,730
22"	24,311	998	0	25,309
23½"	9,087	0	0	9,087
24"	41,383	0	0	41,383
30"	26,953	0	0	26,953
33"	2,409	0	0	2,409
36"	40,892	0	0	40,892
37½"	8,896	0	0	8,896
44"	22,974	0	0	22,974
48"	11,504	0	0	11,504
60"	9,981	0	0	9,981
Total W. I. & S.	869,822′	1,485′	5,678′	865,629′

(CONTINUED ON PAGE 48)

TABLE No. 7—(Continued)

Transite Pipe

Size	Total Pipe in Ground July 1, 1947	Pipe Laid 1947-48	Removed or Abandoned 1947-48	Total Pipe in Ground June 30, 1948
6″	4,309′	595′	0′	4,904′
8″	661	7,338	0	7,999
Total Transite	4,970′	7,933′	0′	12,903′

Cast Iron Pipe

2″	22,468′	1,575′	490′	23,553′
3″	62,001	54	0	62,055
4″	494,980	2,314	2,798	494,496
6″	1,669,175	28,718	0	1,697,893
8″	1,457,260	14,089	0	1,471,349
10″	6,873	0	525	6,348
12″	419,582	2,434	0	422,016
16″	252,082	3,239	0	255,321
20″	22,642	0	0	22,642
22″	19,058	0	0	19,058
24″	52,173	0	0	52,173
30″	6,108	0	0	6,108
Total C. I.	4,484,402′	52,423′	3,813′	4,533,012′
Total All	5,359,194′	61,841′	9,491′	5,411,544′
Miles	1,014.999	11.710	1.800	1,024.909

TABLE No. 8
VALVE RECORD
CITY DISTRIBUTION SYSTEM
June 30, 1948

Gates		Service Gates		Blowoffs		Air Valves		Check Valves	
2″	101	3″	401	¾″	9	¾″	32	1½″	7
3″	244	4″	367	1″	45	1″	17	2″	9
4″	1147	6″	226	1½″	288	1½″	305	3″	1
6″	3612	8″	155	2″	833	2″	227	4″	10
8″	3335	12″	8	3″	199	3″	5	6″	25
10″	6			4″	267	4″	1	8″	28
12″	771			6″	157	6″	13	12″	3
16″	397			8″	108	8″	226	16″	3
20″	23			12″	21				
22″	20			16″	2				
24″	57							Stop Cocks	
30″	21							⅝″	18
36″	20							¾″	140
37½″	2							1″	201
42″	1							1½″	986
48″	1							2″	2749

TABLE No. 9
CONTRACT DATA 1947-48

Contract No.	Title of Contract	Division	No. of Bidders	Contractor	Date of Award	Date of Completion	% Completion 6/30/48	Bid Price	Contract Cost to 6/30/48
423	Replacing Diversion Flume—San Mateo Dam No. 2.	Peninsula	3	Metropolitan Constr. Co.	8/ 4/47	2/23/48	100%	$43,930.00	$44,690.03
425	Lay 4, 6, 8 and 12" C. I. Mains Laurel Heights Subdivision	City Dist.	1	E. J. Treacy	7/ 8/46	11/10/47	100%	40,344.50	40,744.16
426	Lay 6, 8, and 12" C.I. Mains Miraloma Park Subdivision	City Dist.	2	F. T. Fairey	6/30/47	9/24/47	100%	22,537.80	16,817.08
436	Construction of Irvington Pumping Station	Alameda	6	F. J. Early, Jr.	3/31/47	3/ 4/48	100%	87,559.50	84,228.49
439	Lay 6" C.I. Main to Palace of the Legion of Honor	City Dist.	2	S.F.W.D.	11/ 5/47	12/19/47	100%	3,101.25	2,119.35
449	Lay 16" C.I. Main in Third St., Evans to Arthur Ave. and in Easement to Pier No. 92	City Dist.	3	E. J. Tobin	5/12/47	8/19/47	100%	36,136.25	32,952.90
450	Lay 6" Transite, 2 and 8" C.I. Mains in 14th Ave. and Fanning Way	City Dist.	2	S.F.W.D.	6/ 2/47	8/ 7/47	100%	7,948.75	6,899.04
451	Alterations on 5th Floor, SFWD Bldg.	General	4	United Pac. Ins. Co.	7/21/47	12/17/47	100%	14,238.00	14,299.60
452	60" Sunset Supply Line—Colma to Sunset Reservoir.	Peninsula	6	M & K Corp.	8/ 4/47	5/12/48	100%	667,289.00	631,812.12
453	Lay 6 and 8" C.I. Mains in Sunset and Parkside Dists.	City Dist.	2	F. T. Fairey	6/17/47	8/ 8/47	100%	37,189.00	34,524.06
454	Repaving Street and Sidewalk Openings Fiscal Year 1947-48	City Dist.	1	Pac. Pavements	6/30/47	6/30/48	100%	58,055.00	52,688.10
456	Replacing Stone Dam Aqueduct Section No. 1	Peninsula	2	Metropolitan Constr. Co.	7/28/47	3/ 4/48	100%	134,384.50	132,564.09
457	Lay 6 and 8" C.I. Mains in San Bruno Ave., Goettingen and Dublin Streets	City Dist.	3	S.F.W.D.	8/11/47	9/16/47	100%	6,315.50	4,993.18
458	Lay 12" C.I. Main in Bella Vista Way bet. Molimo and Avoca Alley	City Dist.	2	F. T. Fairey	8/18/47	9/12/47	100%	5,974.30	5,199.30
460	Harvesting Walnut Crop at Sunol	Agricultural	2	John Helzer	9/ 2/47	11/ 5/47	100%	10,050.00	4,533.38
461	Lay 6" C.I. Mains in 40th, 41st and 42nd Aves., bet. Rivera and Taraval Streets	City Dist.	3	E. J. Treacy	9/29/47	12/10/47	100%	11,372.50	9,804.78
462	Lay 6 and 8" C.I. Mains in Gaven St. and Treat Ave.	City Dist.	2	S.F.W.D.	10/ 6/47	11/20/47	100%	5,139.25	3,805.21
463	Paving Roadways at Sunol Headquarters	Alameda	4	Clements & Co.	10/14/47	12/ 8/47	100%	4,620.00	4,321.65
465	Lay 6" C.I. Mains in Graystone Ter. Villa to Corbett	City Dist.	2	Fred T. Fairey	10/ 6/47	11/25/47	100%	5,023.00	4,107.66
466	Collecting Lines of Pleasanton Wells and Relocation of a portion of the Pleasanton Pipe Line	Alameda	3	M. J. Lynch	10/20/47	12/31/47	100%	29,120.00	26,537.03

(CONTINUED ON PAGE 50)

TABLE No. 9—(Continued)
CONTRACT DATA, 1947-1948

Contract No.	Title of Contract	Division	No. of Bidders	Contractor	Date of Award	Date of Completion	% Completion 6/30/48	Bid Price	Contract Cost to 6/30/48
468	Lay 8 and 12" C.I. Mains in Napoleon St. bet. Evans and Jerrold Aves.	City Dist.	2	F. T. Fairey	11/10/47	2/16/48	100%	9,413.00	8,971.77
469-R	Remodeling of Millbrae Pump Station	Peninsula	5	N. O. Wiseth	1/12/48		92%	22,354.00	22,354.00
470	Lay 6 and 8" C.I. Mains in Parkside	City Dist.	3	F. T. Fairey	12/29/47	2/10/48	100%	9,685.25	7,581.20
471	Lay 12" C.I. Main in Peabody St. from Sunnyvale Ave. to County Line	City Dist.	3	E. J. Treacy	12/22/47	2/13/48	100%	4,525.25	4,397.32
472	Rehabilitation Sunol Distr. System	Alameda	9	E. T. Haas Co.	3/ 1/48	6/30/48	100%	8,755.00	9,619.07
474	Lay 8" C.I. Mains in Barneveld ond Loomis, bet. Oakdale and Jerrold	City Dist.	3	F. T. Fairey	3/ 1/48	4/ 9/48	100%	8,159.45	9,110.84
475	Lay 22" Steel Main in Geary St. bet. Lyon and Masonic St.	City Dist.	5	Martin Murphy	3/ 1/48	6/14/48	100%	16,021.00	14,850.49
476	Lay 8" C.I. Main in Mendell St. bet. Hudson and Jerrold Ave.	City Dist.	3	E. J. Treacy	3/ 8/48	4/ 7/48	100%	3,139.80	2,905.30
477	Lay 6 & 8" C.I. Mains in Alemany Blvd. & Custer St.	City Dist.	3	E. J. Treacy	3/29/48		95%	8,568.00	6,816.67
478	60" Sunset Supply Line—Baden to Colma	Peninsula	8	McGuire and Hester	4/12/48		22%	319,895.00	69,179.45
479	Lay 6 and 8" C.I. Mains in Army St. from Shotwell to South Van Ness Ave.	City Dist.	2	F. T. Fairey	5/17/48		30%	5,363.30	1,608.99
482	Lay 6, 8, 12" C.I. Mains in Lakeshore Subdv. No. 3	City Dist.	4	E. J. Tobin	6/ 7/48		0%	59,878.85	.....
483	Lay 6 and 8" C.I. Mains in Amherst, Princeton, University, Bacon and Wayland St.	City Dist.	3	E. J. Treacy	5/10/48		0%	11,894.75	.....
485	Lake Merced Crossing for 60" Sunset Supply Line	Peninsula	2	M & K Corp.	6/21/48		0%	65,912.00	.....
486	Lay 6" C.I. Main in 42nd Ave., Worcester St. and St. Charles Ave.	City Dist.	3	F. T. Fairey	5/10/48	6/14/48	100%	5,283.25	5,134.78
488	Repaving Streets and Sidewalk Openings, Fiscal Year 1948-49	City Dist.	1	Pacific Pavements Co.	6/21/48		0%	72,675.00	.....

ORGANIZATION AND PERSONNEL

N. A. Eckart.....General Manager and Chief Engineer

WATER PRODUCTION AND ENGINEERING

T. W. Espy.....Senior Engineer in Charge of Water Production

L. J. Archer.....Senior Engineer in Charge of Design

C. A. Lauenstein.....Senior Engineer—Special Construction

L. A. McAtee.....Senior Engineer—Construction

W. A. Yount.....Superintendent Alameda Division

W. R. Anderson.....Assistant Superintendent Alameda Division

G. J. Davis.....Superintendent Peninsula Division

S. M. Millard.....Assistant Superintendent Peninsula Division

G. E. Fanning.....Photographer

CITY DISTRIBUTION

G. W. Pracy.....Superintendent City Distribution

O. G. Goldman.....Assistant Superintendent City Distribution

A. G. Zecher.....General Foreman City Pipe System

John E. O'Marie.....General Foreman Services and Meters

A. C. Doidge.....Head Clerk

R. W. Tullis.....Superintendent of Machine Shop

WATER PURIFICATION

H. C. Medbery.....Engineer of Water Purification

E. W. Barbee.....Assistant Engineer—Water Purification

H. W. Tracy.....Assistant Engineer—Water Purification

H. L. Fruitman.....Senior Water Chemist

WATER SALES

Joseph Conway ..... Manager, Water Sales Division
J. W. Cooper ..... Assistant Manager, Water Sales Division
W. D. Ryder ..... Chief Clerk, Consumers' Accounts
James Hennessy ..... Chief Clerk, Collections
E. R. Benninger ..... Head Clerk, Water Sales Division
C. C. Clark ..... Consumers' Complaint Investigator
Kearce Fahy ..... Chief Adjuster, Consumers' Accounts
J. E. Huntoon ..... Head Clerk, Consumers' Accounts
Chas. Hynes ..... Head Clerk, Service and Supply
Francis Lennon ..... Head Clerk, Closing Bills
J. A. Ragsdale ..... Head Clerk, Docks and Shipping
C. C. Young ..... Chief Water Service Inspector

LANDS AND AGRICULTURE

H. C. Melone ..... Superintendent Agricultural Division

ACCOUNTS

E. J. White ..... Senior Accountant
Z. H. Taylor ..... Accountant
H. M. Kinsey ..... Cashier

RETIRED 1947-48

During the past fiscal year the following employees were retired from service, and recognition is given on account of their faithful service in the organization:

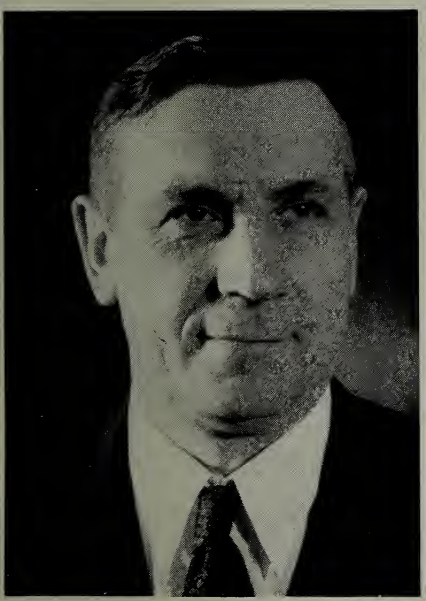
William D. Ryder, Chief Clerk ..... 49 years' service
Michael J. Manning, General Clerk ..... 34⅙ years' service
Mary Campbell, General Clerk-Stenographer ..... 29-5/12 years' service
Geo. R. Hutchinson, Operating Engineer ..... 26⅔ years' service
Patrick J. Sullivan, Pipe Caulker ..... 24-7/12 years' service
Michael McDonald, Laborer ..... 22 years' service
Hector S. Brodie, Laborer ..... 13 years' service
Levan J. Natzvly, Draftsman ..... 5¼ years' service

CHERRY VALLEY WATERSHED

HETCH HETCHY WATER SUPPLY, POWER AND UTILITIES ENGINEERING BUREAU

A. O. OLSON

Manager and Chief Engineer



A. O. OLSON
Manager and Chief Engineer

The Hetch Hetchy Water Supply, Power and Utilities Engineering Bureau is responsible for the administration and engineering, construction and operation of the Hetch Hetchy water supply and electric power system. It furnishes engineering services to the Municipal Railway and San Francisco Airport, planning and supervising construction for both of these utilities, but does not participate in their management and operation.

Organization and Personnel:

The work of the bureau is organized under the direction of the following:

General Administration and Engineering:

A. O. Olson, Manager and Chief Engineer
Leslie W. Stocker, Senior Civil Engineer
Louis M. Perrin, Senior Electrical Engineer
Laurence V. Degnan, Senior Civil Engineer
William W. Helbush, Senior Civil Engineer
George D. Burr, Senior Civil Engineer
William B. Bushnell, Senior Civil Engineer
Max J. Bartell, Senior Engineer
Adolph J. Wehner, Construction Engineer
Harry E. Lloyd, Construction Engineer
Wilfred A. Robison, Senior Accountant

Operation and Maintenance, Hetch Hetchy Water and Power System:

Thornton Easler, Electrical Engineer, in charge (office at Moccasin)
Douglas Mirk, Superintendent, Moccasin Power House
James V. Mitchell, Superintendent, Early Intake Power House
Raymond L. Wallace, Assistant Engineer, Moccasin Headquarters
Ernest E. Rawles, Assistant Engineer, Oakdale Headquarters
Martin J. Lyons, Assistant Engineer, Livermore Headquarters

Engineers, draftsmen, surveyors, accountants, clerks, stenographers, foremen, plant and equipment operators, mechanics and others in numerous classifications are employed, in numbers varying with the requirements of the work in hand. The total number of employees of the bureau at the end of the fiscal year was about 220.

General Conditions During the Year:

Great difficulty was experienced by the bureau, in all branches of its engineering work, in securing competent engineers and engineering technicians, for both office and field work. The preparation of the plans and specifications required for major construction undertakings was hampered on this account, and the work could not be done as fast as desired, even though a great deal of overtime work was performed. The engineering staff has earned much credit for its accomplishment in the face of such difficulties.

Continued rapid increase of labor and material prices was of course reflected in contract prices. Cost estimates based on conditions of earlier years must be revised upward, appreciably reducing the amount of work that can be financed from earlier appropriations. This applies in marked degree to the 1945 Airport bond issue.

Outline of the Year's Work:

The Hetch Hetchy Water Supply and Power Divisions performed their ordinary duties of operation and maintenance. Some work was done by contract and some by the City's force to catch up on long-deferred items of maintenance and replacement. Contractors were found to be much more willing than they were a year or two ago to bid on work in the relatively remote mountain region, as at Early Intake and Lake Eleanor.

Following the authorization, in the November, 1947, election, of a $25,000,000 bond issue to finance aqueduct construction, the engineering bureau began surveys, design and specification writing for the initial sections of the new San Joaquin Pipe Line No. 2. This work was nearly completed during the year.

Plans and specifications were prepared for spillway gates to be furnished, to increase the storage capacity of Hetch Hetchy Reservoir.

The Municipal Railway engineering division of the Bureau planned and supervised the construction of improvements to the City-owned transit system, and the purchase of street cars and buses, made possible by the action of the voters in approving a $20,000,000 bond issue for Municipal Railway purposes in November 1947. Previous work of the same nature was necessarily limited to a relatively small scale by the limits of financing.

At the Airport, considerable progress was made in extending the field by filling and in constructing pavements and drainage facilities. Plans and specifications were prepared for further extensions estimated to cost $4,000,000, for which government aid is assured under the Federal Airport program. Reconstruction and replacement work also required several construction contracts. Preliminary engineering and architectural work was done on the proposed new terminal building

HETCH HETCHY WATER SUPPLY

The Hetch Hetchy Water Supply system experienced another season of low precipitation, but the runoff proved ample to fill the reservoirs and the demand

FOAMING OVERFLOW

After a prolonged drought, late spring rains filled up Hetch Hetchy Reservoir so that water spilled for weeks over the side spillway at O'Shaughnessy Dam.

for water for power generation and domestic supply were fully met. Works now in course of design, to be ready for service in 1949, will add to both the storage capacity and the delivery capacity of the system.

Hydrography:

The precipitation and stream flow of the season 1947-48 were below normal. The Tuolumne River runoff as measured in terms of computed natural flow at La Grange was 1,332,648 acre-feet during this fiscal year, compared with 1,134,235 acre-feet last year. Despite the low flow during the year, both the Hetch Hetchy and Lake Eleanor Reservoirs filled, owing to the series of intermittent storms during the months of March, April and May. Draft from storage began at Hetchy and Lake Eleanor on June 25, 1947. The spill point was reached at Hetch Hetchy Reservoir on June 13, 1948. The water in storage on July 1, 1948, in comparison with 1947 is shown below:

Reservoir	Acre-feet, July 1 1948	1947
Hetch Hetchy	347,040	330,828
Lake Eleanor	26,146	25,123
Priest Forebay	621	915
Total	373,807	356,866

A forecast of the runoff from the system watersheds during the season of low precipitation from April 1 to July 31, is essential to an intelligent planning of a conservation and flood control program. Information for such a forecast is secured by snow surveys directed by the State Department of Public Works, Division of Water Resources, and performed cooperatively by the Hetch Hetchy organization, state, governmental, and other interested agencies. The state publishes the snow data collected in four bulletins, issued once a month from January to April, and includes a forecast of runoff for the period April 1 to July 31 in each of the last two issues. These forecasts give several months' advance warning of an impending runoff deficiency which permits the City and irrigation districts using the Tuolumne River flow appropriately to schedule the use of water in their common interest. The annual forecasts will prove even more valuable at the conclusion of the present continuing joint efforts of the United States War Department, the State, City, and Irrigation Districts toward a more comprehensive flood control system for the coordinated regulation of the Tuolumne River stream flow for purposes of domestic water supply, irrigation and power generation.

It appeared from the final report of the California Cooperative Snow Survey that with water used conservatively it will be sufficient to meet the City's needs, with the runoff at about 70 per cent of normal.

The following table shows the predicted and actual quantities of runoff from the Tuolumne River watershed for the year 1947, and the predicted amount for 1948:

Point of Measurement	Run-off in Acre-Feet—April 1 to July 31 1947 Predicted	1947 Measured	1948 Predicted
Hetch Hetchy	400,000	403,640	460,000
La Grange	730,000	676,307	950,000

The following tables show the measured precipitation and the natural stream flow of the Tuolumne River, Eleanor Creek, and Cherry River by months during the fiscal year:

PRECIPITATION, INCHES

Month	Hetch Hetchy 1947-48 Season	Hetch Hetchy 1910-48 Average	Lake Eleanor 1947-48 Season	Lake Eleanor 1910-48 Average	Moccasin 1947-48 Season	Moccasin 1925-48 Average
July	0.00	0.15	0.00	0.10	0.00	0.01
August	0.00	0.10	0.00	0.19	0.00	0.01
September	0.23	0.63	0.10	0.62	0.02	0.16
October	5.23	2.17	6.00	2.27	2.53	1.56
November	1.56	3.05	1.33	3.74	1.22	2.46
December	1.24	4.91	1.18	6.41	0.91	4.19
January	2.06	5.68	2.39	7.69	0.46	4.35
February	4.38	5.91	4.72	7.97	2.92	5.40
March	7.31	5.05	8.73	6.08	6.89	4.35
April	7.86	3.17	9.72	3.64	7.67	2.59
May	2.67	1.87	2.78	1.87	1.81	0.78
June	0.52	0.75	0.55	0.75	0.00	0.24
Total	33.06	33.45	37.50	41.34	24.43	26.10

NATURAL FLOW OF TUOLUMNE RIVER, ELEANOR CREEK AND CHERRY RIVER IN ACRE-FEET

Fiscal Year 1947-1948

Month	Tuolumne River at Hetch Hetchy	Eleanor Creek at Lake Eleanor	Cherry River in Cherry Valley	Tuolumne River at La Grange
July	15,943	1,331	1,075	20,882
August	4,804	0	109	0
September	3,082	98	60	2,884
October	17,102	5,913	10,984	38,204
November	14,087	3,483	6,270	28,149
December	8,428	1,383	2,594	17,171
January	14,413	6,870	8,836	39,314
February	8,567	3,231	4,637	25,092
March	17,611	7,001	7,555	71,228
April	62,051	24,702	29,234	219,715
May	204,468	46,677	73,799	436,245
June	259,748	32,587	79,617	433,764
Total	630,304	133,276	224,770	1,332,648

Diversion by San Francisco:

There were 22,533,400,000 gallons of water diverted by the City from the Tuolumne River watershed during the fiscal year 1947-48, making a grand total of 170,952,300,000 gallons diverted since the Hetch Hetchy Aqueduct began operation. The diversion by months is shown by the following table:

WATER DIVERTED BY THE CITY FROM TUOLUMNE RIVER WATERSHED

Fiscal Year 1947-1948

1947	Million Gallons	1948	Million Gallons
July	1,916.2	January	1,908.4
August	1,920.4	February	1,779.2
September	1,857.5	March	1,907.4
October	1,918.7	April	1,841.2
November	1,852.6	May	1,898.0
December	1,908.9	June	1,824.9

Total, fiscal year 1947-48	22,533.4
Diverted prior to July, 1947	148,418.9
Total diversion since beginning of Hetch Hetchy Aqueduct	170,952.3

Delivery to San Francisco:

The quantity of Hetch Hetchy water brought to the San Francisco Water Department's system during the fiscal year was 22,533,400,000 gallons, making a total of 170,050,700,000 gallons since October 18, 1934, the date on which the water began to flow through the Hetch Hetchy Aqueduct to San Francisco. The average rate of delivery during the year was 61,600,000 gallons per day.

HETCH HETCHY AQUEDUCT SAN JOAQUIN PIPE LINE

Water Delivered to San Francisco Water Department

	Total Flow M.G.	Avg. Daily M.G.D.
Monthly—Season 1947-48:		
July, 1947	1,916.2	61.8
August, 1947	1,920.4	61.9
September, 1947	1,857.5	61.9
October, 1947	1,918.7	61.9
November, 1947	1,852.6	61.8
December, 1947	1,908.9	61.6
January, 1948	1,908.4	61.6
February, 1948	1,779.2	61.4
March, 1948	1,907.4	61.5
April, 1948	1,841.2	61.4
May, 1948	1,898.0	61.2
June, 1948	1,824.9	60.8
Total	22,533.4	61.6

Seasons Since Beginning of Pipe Line Operation:	Total Flow M.G.	Avg. Daily M.G.D.
1934-5	12,380.2	48.5
1935-6	13,149.8	35.9
1936-7	10,388.9	28.3
1937-8	1,358.5	3.7
1938-9	7,512.2	20.6
1939-40	14,883.3	40.7
1940-1	7,515.7	20.6
1941-2	5,744.6	15.7
1942-3	6,276.1	17.2
1943-4	9,386.2	25.6
1944-5	17,761.1	48.7
1945-6	18,616.3	51.0
1946-7	22,594.4	61.9
1947-8	22,533.4	61.6
Total	170,050.7	34.0

The stored water available to the San Francisco Water Department at the end of the 1947-48 fiscal year was 4.08 times its system requirements during the year. The quantity in storage at various points was:

Reservoirs	Storage Billion Gallons
Hetch Hetchy and Lake Eleanor	121.4
Calaveras, Peninsular and City Reservoirs	29.7
Total	151.1

Cherry River Development:

The interest of the City of San Francisco in the waters of the Tuolumne River and its principal tributary, the Cherry River, dates back forty-eight years, to January 8, 1900, at which time the Charter of the City and County of San Francisco became effective and committed the City to the acquisition of its essential utilities.

In 1901, Senator James D. Phelan, then Mayor of San Francisco, made appropriations of water which were granted by the State of California on the Tuolumne River, Eleanor Creek, and Cherry River. These appropriations, together with the rights of the Modesto and Turlock Irrigation Districts, encompass all of the appropriative water on the Tuolumne River above the La Grange Power House.

The approval of the Hetch Hetchy Grant, or "Raker Act," on December 19, 1913, granted to the City the right to fully develop its water resources within the boundaries of the Yosemite National Park and the Stanislaus National Forest, and recognized the only prior interests on the river as those of the Modesto and Turlock Irrigation Districts.

The Raker Act places many restrictions and obligations upon the City, and is the basis upon which the water resources of the Tuolumne River are being developed and operated.

As a result of the above action the City of San Francisco began to develop the rights granted it by the two agencies—namely the State of California, from whom the title to the necessary water was obtained, and the Federal Government, through the Department of Interior as to rights of way and easements within the Yosemite National Park and through the Department of Agriculture as to matters within the Stanislaus National Forest.

CHERRY DAM SITE
Across Cherry River at this point a dam will be built.

The development of these rights was carried on by the City under what is known as the Hetch Hetchy Project. The Cherry River Project is an integral part of the Hetch Hetchy Water Supply and has long been under consideration and study. These studies relegated the Cherry River Project development to a period after the completion of the main facilities in the Hetch Hetchy area.

The general plan for the Cherry River Project consists of the following major items:

(1) A dam about 300 feet high and 2,600 feet long.

(2) A reservoir having a capacity of approximately 274,000 acre feet.

(3) A tunnel about 6,400 feet long, with control works, which would divert practically all of the Eleanor flow and storage into the Cherry Reservoir.

(4) An aqueduct some 6 miles long, including 6,300 feet of tunnel, on the west side of the Cherry Canyon from the proposed dam to a point above the confluence of the Cherry and Tuolumne Rivers, making available 410 second feet of water under a 2,000 foot head.

(5) Penstocks and power house for the development of approximately 70,000 horsepower of electricity.

(6) Suitable transmission lines.

The studies and investigations and preliminary work on the Cherry River have been made possible by an annual appropriation of $25,000, the first of which was made for the fiscal year 1940-41. The initial appropriation has been followed by seven additional appropriations of $25,000 each, the current one of which provides for the continuation of this work until July 1, 1948.

The City and the Irrigation Districts consider that the Raker Act is controlling in the matter of the logical development of the water resources of the Tuolumne River, and to that end have worked out mutual agreements for such development.

The Master Plan for the full development of the Tuolumne River is based upon on ultimate delivery of 400,000,000 gallons of water per day for domestic purposes in San Francisco and the Bay Area to the south, and for delivery to the Modesto and Turlock Irrigation Districts of 1,100,000 acre feet of water annually. Such a program will consume the entire safe yield of the Tuolumne River.

Because of the stipulations of the Raker Act, the City must provide reservoirs in which to store any water in excess of the District's rights when such excess water is available.

However, in the course of engineering studies regarding the conservation of the water resources of the Tuolumne River, it became apparent that this great system of reservoirs could be operated for flood control as well. In the midst of these studies it developed that the United States Army Engineers were making flood control studies of the same watershed.

During the past ten years, the engineers of the War Department have met with the engineers representing the City and the Districts, and have discussed the many features involved in this enterprise, and have come to an agreement as to the plan which would best suit the interests of all parties concerned. These conferences had principally to do with a reconsideration of the War Department's plan to provide additional storage on the river required for flood control.

It is now intended to provide, at Federal expense, the additional storage required by the construction of the Cherry Valley Dam. The storage there available, together with that now available at San Francisco's Hetch Hetchy and Eleanor Reservoirs and the District's Don Pedro, Owens and Dallas-Warner Reservoirs, will provide a high degree of flood control.

The recommendation of the Chief of Engineers, War Department, that an expenditure by the Federal Government estimated at $5,800,000 be authorized toward the first cost of the proposed New Don Pedro Reservoir **or other suitable reservoirs** in Tuolumne Basin, provided that local interests construct, maintain and operate the dams and reservoirs, allocate storage for flood control and agree to operate such storage in accordance with rules and regulations prescribed by the Secretary of War, became a part of Public Law 534, in December, 1944.

The City of San Francisco and the Modesto and Turlock Irrigation Districts now plan that the Federal contribution expected for flood control on the Tuolumne River will be expended for the construction of the Cherry Valley Dam and appurtenances.

During the past year the Federal Government made its first appropriation in amount of $600,000.00 for the purpose of initiating this program. A final determination is yet to be made of the total amount to be received and the conditions under which it will be expended.

In conformity with the policy previously established, City forces were sent into

the mountain areas during the summer months and performed surveys necessary for the design of the various features to be constructed.

Relations with Irrigation Districts:

The long standing policy of cooperation between the City and the Turlock and Modesto Irrigation Districts in the conservation of the Tuolumne River waters was satisfactorily continued and all collaborated with Army Engineers in planning for this river's flood control which is so essential to the efficient use of its waters. An agreement has now been reached upon a Master Plan of development.

Relations with United States Department of Interior:

The usual $30,000 annual payment was made to the United States in compliance with the Raker Act, making a total of $650,000 paid to date.

Utilities Engineering Bureau staff members kept in touch with Yosemite National Park officials concerning matters of mutual interest.

Water Litigation:

Suit filed by Eleanor Hughes Shields, executrix of the estate of Thomas M. Hughes, against the City and County of San Francisco, seeking judgment in the amount of $125,000 for alleged damage to springs on ranch property in the vicinity of Moccasin by reason of the construction of the Foothill Tunnels is still pending. A complete record of the flow of water from these springs has been kept by the department since before tunnel construction.

Reservoirs, Dams and Intakes:

O'Shaughnessy Dam: The drains leading from the wells in O'Shaughnessy Dam were cleaned. The gage board on the upstream face of the Dam, and the stilling well pipe for the water stage recording gage, were painted.

Early Intake: Repairs were made to one of the sluice valve gates in the dam at Early Intake, and sand was removed from the reservoir. New rubber seals were put on one of the radial gates of the spillway, and leaks in the dam were caulked.

Lower Cherry Dam: The grizzlies at the Cherry diversion dam were raised, and the rocks obstructing them were sluiced into the tunnel.

Lower Cherry Aqueduct: The old wood stave pipe on the Cherry canal was reconstructed and partly replaced, and approximately 1400 linear feet of the canal lining was gunited, the work being done by Joe Chevreaux, Contractor, under Contract No. 200. A concrete wall was poured at the north end of the wood stave pipe to hold the footings under the pipe.

Priest: Brush was cleared from around the reservoir and dam at Priest, and the fence repaired where needed.

Moccasin: Brush and debris were cleaned out of the reservoir at Moccasin, and the grizzlies at the intake tower to the Foothill tunnel were cleaned. Brush and debris were cleaned out of Grizzly canal. Repairs were made to the fence on the lower dam, and to the adjacent road fences. Brush and debris brought down by high water were cleaned out of Moccasin Creek in front of Moccasin upper dam.

Lower Cherry Aqueduct, Contract No. 200: Under this contract, for the construction of a Sluiceway and Miscellaneous Work in the Lower Cherry Aqueduct, Joe Chevreaux of Auburn, Contractor, the road work and canal work required

were completed. The remaining items, all pertaining to the sluice gates at the Cherry diversion dam, are awaiting low water for their completion. Mr. Chevreaux was granted an extension of time on this account.

Roads and Trails:

Gravel was hauled from the gravel pit at Drew Meadows and spread on the surface of the South Fork-Mather road.

The roads around the camp at Intake and Moccasin were surfaced with premix road material, and the roads around Priest and West Portal were graded and oiled, the work being done by Messrs. Beerman & Jones, Contractors, Sonora.

A pioneer dirt road was built from the east end of Tunnel No. 2A to a point immediately above the Cherry diversion dam, the working being done under Contract No. 200, above mentioned. A new turn-around deck for vehicles was built over the lower Cherry canal.

On the upper portion of the road leading to the South Fork pipe crossing, a masonry retaining wall was built and rock was excavated, in order to obtain the necessary road width. Contract No. 205, for the lower portion of this road, and a timber bridge across the Middle Fork of the Tuolumne River, was let to the Hetch Hetchy Water Supply, and the work will be done by the City's force.

The trails between Adits 2-3 and 5-6 were cleared of brush and slides.

Trails were cut around city property at Moccasin as a protection against fire, and the grass was burned off in the enclosed area.

Culverts and ditches were cleaned, cross ditches were dug, and roads graded.

During the winter months snow was plowed off the Hetch Hetchy Railroad between Groveland and Mather, and plower off the highway between Mather and O'Shaughnessy Dam.

Hetch Hetchy Railroad:

Brush was cleared off the Hetch Hetchy Railroad right-of-way, approximately 800 old ties were replaced with new ones, and the track was repaired and realigned. The timbers of the railroad trestle over the Moccasin penstock in Moccasin yard were creosoted.

Tunnels:

Lower Cherry Aqueduct: Rocks were removed from the 72-inch pipe between tunnel 5 and the forebay at Intake, and portions of tunnels 2A and 3 were patched with cement mortar. The concrete tube between tunnels 2 and 2A was patched with cement mortar.

Mountain Division: Tunnel dump material which had been placed over the shaft covers at Big Creek and Second Garotte as a war time safety measure was removed.

Periodical inspections were made of adits 5-6 and 8-9, and the sand traps at the South Fork pipe crossing and at adits 5-6 and 8-9 were blown out.

Buildings and Camps:

Lake Eleanor: A new house and garage were built for the reservoir keeper at Lake Eleanor by City force under Contract No. 195. A new combination bunkhouse and boarding house was built to replace the old buildings used during con-

NEW ELEANOR COTTAGE

New quarters for Lake Eleanor reservoir keeper and family who are snowbound during some months of year.

ELEANOR BUNKHOUSE

struction of the dam at Lake Eleanor, by Chas. J. Cunningham, Contractor, Oakdale, under Contract No. 194.

Repairs were made to the sewer line at Lake Eleanor.

Mather: The old black iron pipe and plumbing fixtures in the Hetch Hetchy Water Supply cottages at Mather were replaced with galvanized iron pipe, and new plumbing fixtures and a new fire line and valves were installed. General maintenance work was also done on the cottages.

Early Intake: Contract No. 203 was awarded to Joe Chevreaux of Auburn for the extension and remodeling of the bunkhouse at Early Intake construction camp.

A pump and a second-hand wood stave water tank, for an emergency camp water supply, were erected at Intake, and pipe was laid from the tank to the camp.

Moccasin: New roofing paper was put on the roof of cottage No. 33 at Moccasin, a new kitchen sink and drain board were installed in cottages Nos. 2 and 5, the plaster in the bathroom of cottage No. 22 was replaced with wallboard, a new sink was installed in the kitchen of cottage No. 18, the rafters and roof of cottage No. 14 were repaired, and a new smokestack was installed at the incinerator.

Riverbank: The city warehouse at Riverbank was dismantled, and the property vacated.

Oakdale: A prefabricated steel warehouse, 80 ft. x 40 ft., was erected between 4th and Sierra streets at Oakdale, under contract No. 201, by Don DaRoza, Contractor, of Stockton.

Tesla Portal: The plaster ceiling of two bedrooms of the chlorinator plant operator's cottage at Tesla Portal was replaced with sheetrock.

The sewage disposal system at Tesla Portal was repaired and remodeled. A new septic tank was constructed to serve the cottage. Drains from the pump house and chlorinator building were sealed to keep the fumes from the chlorine waste water from the plant.

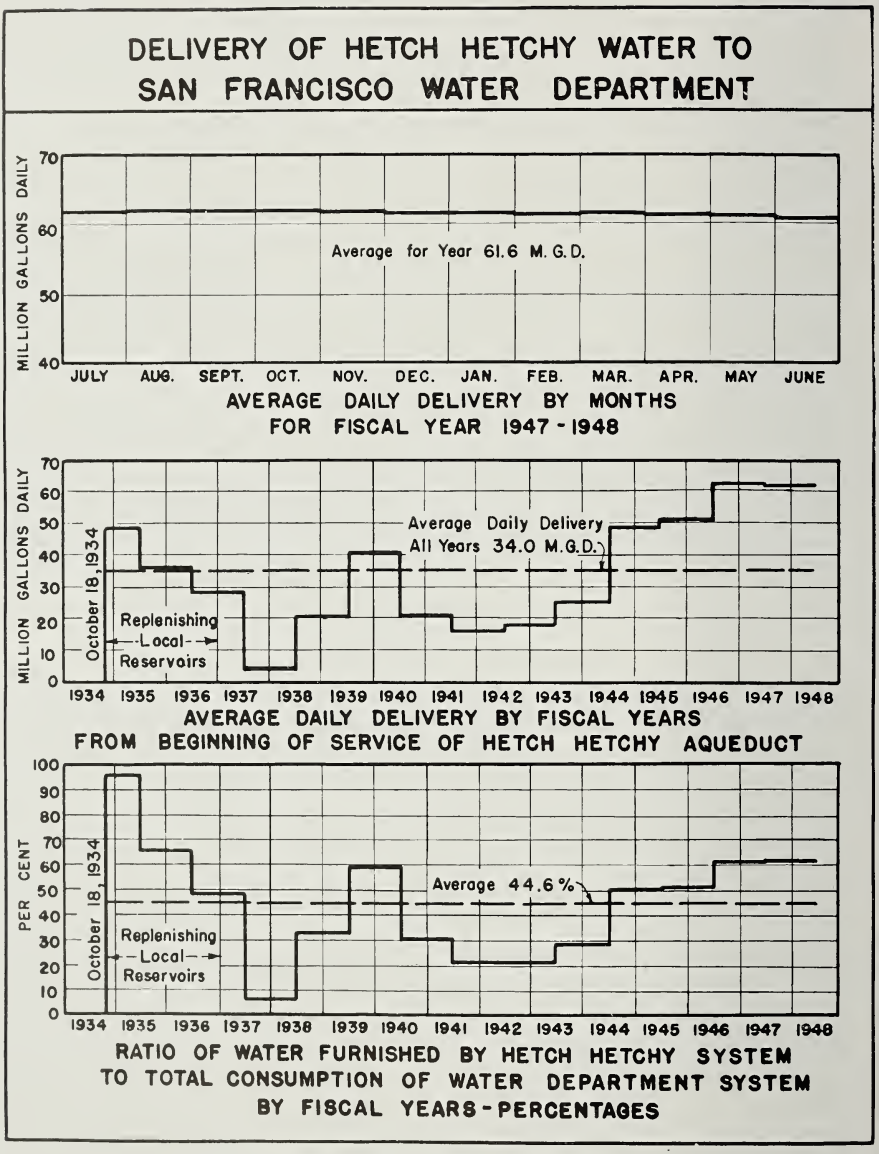
Livermore: The inside of the cottage at Livermore headquarters was painted. The roof of the shop at Livermore was painted. This building, of galvanized iron, was built during the tunnel construction period on the site of the old yards on the Railroad Avenue and later moved to its present location on School Street.

HHWS Contract No. 201 was completed February 10, 1948. Under this contract a prefabricated steel warehouse, 40 ft. x 40 ft., was erected in the east end of the yard at Livermore, fronting on School Street.

San Joaquin Division:

San Joaquin Pipe Line No. 1: This pipe line was in constant use at full capacity throughout the year, the customary annual shutdown for aqueduct tunnel inspection being omitted because of the need of the Water Department for the maximum delivery of Hetch Hetchy water. The average daily flow rate was 61,600,000 gallons. No work on the line was necessary beyond meter reading, routine patrolling, and minor maintenance work such as cleaning manhole and valve boxes, testing valve operation, painting exposed accessories, and access road surfacing in spots.

The Delta-Mendota Canal of the Central Valley System, to be constructed by the United States Bureau of Reclamation, will cross at right angles beneath the



City's right of way about five miles east of Tesla Portal. A concrete siphon structure is to be built, 53 feet wide and 19 feet deep over all, with three compartments each 16 by 16 feet inside. The top of the structure will be about 12 feet beneath the ground surface, and the trench will be refilled to grade after the concrete work is completed, so that the crossing will cause no interference with the City's future use of the ground for pipe lines or other structures. The Bureau of Recla-

mation engineers consulted this office as to such details of design and specifications as might affect the City's interest. An agreement between the City and the United States as to the grant of an easement is being negotiated.

Coast Range Division:

For the second consecutive time, the regular annual tunnel inspection from Alameda East Portal to Tesla Portal was omitted because of the necessity of maintaining the tunnel in full operation during the year. In order to make this inspection it would be necessary to shut the tunnel down for a period of approximately two weeks.

A non-climbable steel fence, six feet high, was installed around the construction shaft at Thomas Camp. This fence is so installed that it may be readily removed in the event that work in the shaft or station may be necessary and then replaced when work has been completed.

A dirt fill barricade was built on the road formerly leading from Valle Shaft to the County Road. During high water, the bridge across Valle Creek at this point washed out. This left the road broken 20 feet above stream bed. This barricade will prevent driving into the creek at this point. Access to Valle Camp is by a ford located about ¼ mile up stream from the old bridge site.

HHWS Contract No. 204, "Removal of Closures in Three Shafts of the Coast Range Division," was awarded to the Hetch Hetchy Water Supply June 29, 1948.

Proposed Major Construction:

O'Shaughnessy Dam Spillway Gates. The entrance to the spillway at O'Shaughnessy Dam (Hetch Hetchy Reservoir) was constructed so as to permit the installation of movable steel gates for the purpose of adding 10 feet to the maximum depth of storage. This would increase the reservoir capacity by 20,000 acre feet. The runoff conditions of the last two seasons showed the desirability of providing this extra storage. Accordingly, a purchase contract has been entered into for the furnishing of the gates. These are to be installed under a later contract, for which plans and specifications are in preparation.

San Joaquin Pipe Line No. 2. In the election of November, 1947, the voters of San Francisco authorized a bond issue in the amount of $25,000,000 for new pipe line construction. About half of this is allocated to San Joaquin Pipe Line No. 2 of the Hetch Hetchy Aqueduct, which is to parallel the existing Pipe Line No. 1 and more than double the capacity of the Hetch Hetchy to deliver water to the San Francisco Water Department. The new line is urgently needed at this time because the water consumption of San Francisco and adjacent territory supplied with water by San Francisco has overtaken the delivery capacity. The deficiency of precipitation, above mentioned, on the local watersheds during the past two seasons has emphasized the need for the second line from Hetch Hetchy, as a third such rainfall season consecutive to these two would make it necessary for the Water Department to draw very heavily on the local reservoirs.

As soon as funds were made available for the purpose, the detailed engineering work necessary for the design and preparation of the specifications for the new pipe line was begun. It was determined that the first construction work to be undertaken should be the construction of 32.3 miles of the new pipe line, the pipe to be 61 inches in inside diameter, with provision for contractors to bid on either steel plate pipe with cement mortar lining and jacket, or on reinforced concrete pipe, with a steel sheet or plate diaphragm as a part of the reinforcement. The

32.3 mile section when cross-connected to Pipe Line No. 1 will increase the capacity of the San Joaquin Division of the Aqueduct by about 25,000,000 gallons daily; and later, when the remaining 15.2 miles of pipe are completed, the capacity of the new line will be over 75,000,000 gallons daily, making a total for the two pipe lines of over 135,000,000 gallons daily. The total length of the San Joaquin Division is 47.5 miles. The plans and specifications are near completion, and it is intended that bids shall be received August 10, 1948.

HETCH HETCHY POWER

A critical shortage of water occasioned by the prolonged drought during the early part of the year resulted in urgent necessity temporarily to curtail electric power generation. In order to direct effective utilization of electric power available, the California Public Utilities Commission established, February 10, a Power Conservation Division, with broad powers over consumption of electricity. Although operation of the Hetch Hetchy project is not subject to the Commission's jurisdiction, all emergency rules and regulations issued were complied with.

Between February 1 and March 22, generation of the City's Moccasin Power House was curtailed on an average of 25 per cent.

Heavy rains during April, together with the effect of daylight saving time permitted the lifting on April 30, of all emergency restrictions imposed on the use of power. In spite of the prolonged drought, it is expected that the total run-off from the City's watersheds during this season will exceed that of last year, and will be ample for our power requirements.

Power Houses and Penstocks:

Early Intake: Generating units Nos. 2 and 3 in the Early Intake Power House were overhauled. Four new sets of thrust bearings were installed in Unit No. 2, three in No. 1, and one in No. 3.

Moccasin: The main needles and needle seats of Unit No. 2 north and south water wheels in Moccasin Power House were replaced with new ones. Electric conduits of Unit No. 4, which had been damaged during reconstruction of the unit, were replaced with new ones. Damaged bushing No. 3 on line No. 4, bus "C" breaker in the bus yard, was replaced with a new bushing. The high voltage bushings on transformers and oil circuit breakers in the bus yard were tested. Rust spots on the Moccasin penstocks were painted with "Inertol"; six expansion joints of the penstocks were repacked, and brush on the right of way was cut and burned.

On the penstock tramway, rollers were repaired, old ties replaced with new where needed, and faulty timbers on one trestle replaced with new.

Most of the equipment and material for telemetering and carrier current communications between Modesto Irrigation District and Moccasin Power House has been received.

Transmission and Telephone Lines:

Insulators were cleaned and tested on the 110-k.v. transmission line and faulty insulators replaced. Towers were painted with aluminum paint, the stubs of several towers cleaned, dampers re-set and replaced where needed.

The tower line crew operating out of Livermore did general maintenance work on the 110-k.v. transmission line, repaired right of way fences, installed new gates where needed, and cleared brush off the right of way and burned it.

The line crew operating out of Moccasin did maintenance work on the 22-k.v. transmission line and on the telephone line on the mountain and foothill divisions, and made repairs and replacements. During the year they replaced 33 poles on the 22-k.v. transmission line, 62 on the telephone line and 2 on the 2300-volt line.

POWER OPERATING STATISTICS

Fiscal Year 1947-1948

	Name Plate Capacity—KVA	Maximum Load—KW	Annual Load Factor—%
Plant Data:			
Moccasin Power House	80,000	84,000	64.9
Early Intake Power House	3,795	4,000	51.1
Combined	83,795	87,000*	65.0
Energy Generated and Purchased (KWH):			
Gross Generation:			
Moccasin Power House	479,629,000		
Intake Power House	17,944,100		497,573,100
Station Service:			
Moccasin Power House	683,900		
Intake Power House	62,000		745,900
Net Generation:			496,827,200
Purchased from P. G. & E. Co.			31,658,885
Total Available			528,486,085
Energy Distributed (KWH):			
Project Use			1,809,223
Sales:			
Municipal Accounts			190,170,027
Modesto Irrigation District			107,199,760
Permanente Metals Corp.			29,448,000
Permanente Cement Co.			112,842,575
Pacific Gas & Electric Co.			23,425,421
Miscellaneous Customers			355,712
Losses and Unaccounted for:			
Hetch Hetchy System			24,824,505
P. G. & E. System (For Municipal Accounts)			38,410,862
Total Available			528,486,085

*Coincidental Demand.

UTILITIES ENGINEERING BUREAU

Municipal Railway Engineering:

Union Street Trolley Coach Line: This trolley coach service, inaugurated in 1946-47, proved so popular that it became necessary to augment the original 16 trolley coaches with 24 new vehicles which were delivered and placed in service the latter part of the fiscal year. These new trolley coaches, purchased from the Marmon-Herrington Company, have aluminum bodies and are about 3,000 pounds lighter than previous models. Like the older models, however, they are equipped with booster buttons and forced ventilation motors, of the compound, wound type with line voltage control. All electrical equipment in the latest coaches was manufactured by General Electric Company.

The last of three contracts for installation of the overhead for this line was completed by Abbett Electric Company September 23, 1947. This contract, cost-

ing $57,054, covered that section of the line from Montgomery and Washington streets to the Presidio.

Extension of "F" Line Across Market at Fourth: May 26, 1947, work began on the extension of the "F" line from Stockton Street across Market Street to connect with Fourth Street streetcar tracks. Eaton and Smith, the contractors, finished the job September 4, 1947, at a cost of $43,372.38.

This job was popularly known as "the hole on Market Street," with a great deal of jesting on the part of the citizens and the newspapers. It was a standard joke in the city that whenever anything turned up missing, the suggestion was inevitably made that the loser look in "that hole on Market Street."

Indeed, there was a certain foundation in truth to the joke, as the contractors, in digging the Market Street "hole" necessary to lay the foundation for the crossover, discovered a labyrinth of pipes, conduits, wires, etc., the pattern for which had not been known beforehand because San Francisco's early-day utility records were lost in the 1906 fire. Perhaps the most surprising discovery of all was an old, abandoned cable car turntable that had long since been buried under Market Street.

The job was prolonged beyond the estimated construction time because of these unforeseen obstacles.

The Hetch Hetchy engineering bureau was called upon to coordinate the work of all the various private and public agencies on the different utility structures found in the "hole." This was accomplished, with a minimum of inconvenience to nearby stores and businesses, by diligent effort on the part of everyone involved.

Installation of the crossing itself, which led the "F" line tracks across the four Market Street tracks, was accomplished without interfering, to any great extent, with the operation of street cars on Market Street. The street cars were re-routed by switches over the inside tracks when work was being done on the outside tracks and vice versa.

In keeping with the public interest in this job, the contractors installed peepholes in the plywood fence surrounding the job so "sidewalk superintendents" could make their daily check on the progress of the work.

Central Money Receiving Room at Geary Carhouse: While the operation of this "money" room is described under the Municipal Railway Section of this report, it should be noted that this modernization job was done by Wellnitz and De Narde for $70,467.13, starting March 21, 1947, and was almost completed by the end of the fiscal year. Its design, the work of the engineering bureau, represents the most advanced thinking in operations of this type.

Ocean Bus Yard: Work was begun during the fiscal year in the conversion of a large portion of the Elkton Yard from a storage area into a modern motor coach servicing center. An incinerator was moved and, under a different contract, a large area was graded and paved by Eaton and Smith. By the end of the fiscal year, construction of a large, modern, complete service station was under way. Quonset huts were purchased and erected at a cost of $8864 to serve temporarily until the necessary buildings are completed. Plans and specifications for the entire program were drawn, and many contracts have already been awarded under which work is going on.

Reconstructing Inner Tracks on Market Street: In contrast to the Stockton Street crossover job, the reconstruction of the inner track on Market Street from Eddy Street to Valencia Street was old hat to the citizens. They had already seen

he huge machines yank old street car rails out of the pavement when the other ections of the track were reconstructed in previous years.

Eaton and Smith were the contractors for this job, which cost $239,919.23. It vas begun March 29, 1948, and completed August 6, 1948.

With this job complete, the Municipal Railway now has new inside track on Market Street from Fremont Street to the entrance of the Twin Peaks Tunnel.

Motor Buses: During the fiscal year specifications were prepared by this bu- eau for 44-passenger motor coaches. White Motor Coach Company was success- ul bidder on contracts for 239 vehicles. Thirty were delivered in the early part f the fiscal year, and most of the remaining 209 toward the end of the year.

Street Cars: Ten electric street cars on order from the St. Louis Car Company ince 1946 were being fabricated at the close of the fiscal year. Specifications vere prepared for the purchase of additional street cars of the single end type. All previous designs for Municipal Railway have been of double end type be- ause of lack of turning facilities.

Trolley Construction: Plans and specifications were completed during the year or the overhead trolley equipment for various trolley coach lines. In June, 1948, contract was awarded to Severin Electric Company for installation of the No. 22 (Fillmore line), programmed for completion in December, 1948.

Plans and specifications were prepared for further development of Mariposa Yard for trolley coach use. In initial phase of rehabilitation program, all trolley coaches will be stored and serviced at this location.

MUNICIPAL RAILWAY ACTIVE CONTRACTS

1947-1948 Fiscal Year

No.	Title	Contractor	Date Awarded	Date Completed	Final Cost
34	Alterations to Store Room, 24th St. Garage	Wm. Martin & Son	9/23/46	7/18/47	$48,609.73
52	Electric Wiring Bay No. 4, Geary Carhouse	Edw. W. Scott Elec. Co.	4/21/47	1/ 7/48	.....
62	Trolley System for Union St. Trolley Coach Line—Montgomery and Wash- ington to Presidio	Abbett Electric Co.	9/30/46	9/23/47	57,054.00
68	Central Receiving Room Geary Carhouse	Wellnitz & De Narde	3/21/47	8/27/48	70,467.13
70	Constructing Stockton St., Fourth St., Connection	Eaton & Smith	5/26/47	9/ 4/47	43,372.38
78	Paving and Installation of Hydraulic Lifts—24th St. Garage	Adam Arras & Son	5/26/47	9/12/47	28,909.00
79	Installing Car Recorder Pole Boxes (17)	Petersen Eng. Co.	6/ 2/47	10/ 7/47	6,970.00
83	Headway Recorder Contact Points (20)	Petersen Eng. Co.	11/10/47	12/16/47	8,340.00
85	Constructing Inspection Pits—Mariposa Yard	Adam Arras & Son	9/18/47	12/18/47	13,627.99
86	Raising Tracks, Presidio Ave. at Bush St.	A. D. Schrader Co.	8/21/47	10/17/47	3,590.19
87	Replacing Skylights, Elkton Shops	Wm. McIntosh & Son	11/18/47	12/12/47	4,488.00
88	Replacing Fuel Pumps and Pavement, 24th St. Garage	Campbell Const. Co.	11/21/47	6/29/48	11,967.17
89	Constructing Convenience Station, Lincoln Way at 47th Ave	Wm. McIntosh & Son	1/26/48	3/15/48	2,497.00
90	Paving Portion of Mariposa Yard	Rosenberg Bros.	12/ 8/47	12/11/47	578.00
92	Reconstructing Tracks on Market St.—Eddy St. to Valencia St.	Eaton & Smith	3/29/48	8/ 6/48	239,919.23
93	Grading and paving—Elkton Yard	Eaton & Smith	3/15/48	5/22/48	13,601.00
94	Relocation of Incinerator—Elkton Yard	D. J. & T. Sullivan	3/22/48	5/14/48	3,927.00

(CONTINUED ON PAGE 74)

MUNICIPAL RAILWAY ACTIVE CONTRACTS—(Continued)
1947-1948 Fiscal Year

No.	Title	Contractor	Date Awarded	Date Completed	Final Cost
295	Rearranging Blower System—Elkton Shops	Colan Heating Co.	4/ 9/48	5/14/48	668.00
296	Erecting Quonset Huts—Elkton Yard	Wellnitz & De Narde	5/ 7/48	5/28/48	8,864.00
297	Grading, Retaining Walls and Service Station, Elkton Yard	C. L. Harney	5/ 3/48	.....	.....
299	Removing and Changing Facilities at Elkton Yard	Municipal Railway	4/28/48	6/11/48	9,000.00
304	Constructing Trolley System, No. 22 Fillmore St. Line	Severin Elec. Co.	6/17/48	.....	.....
305	Relocation of Trolley Wires and Feeders, Geary St., Broderick to Emerson Sts.	Municipal Railway	5/24 48	.....	.....

SAN FRANCISCO AIRPORT ENGINEERING

1945 Airport Bond Construction Program:

Considerable progress was made during the year ending June 30, 1948, in the extension of San Francisco International Airport, and improvement and increase of its facilities. This work was financed with funds derived from sales of bonds of the $20,000,000 Airport bond issue of 1945.

Prior to the beginning of the fiscal year about 7,250,000 cubic yards of fill had been placed in the landing field extension, and appurtenant drainage and other related works had been constructed, as part of the 1945 bond issue program.

During the fiscal year, work was done under 17 contracts at a total construction cost of $3,967,585.59. Plans and specifications were prepared for four additional contracts. Bids taken for the work of these four contracts total $4,075,635.10. Detailed data on all of the 21 contracts are given in the table below.

The construction accomplished under the 17 contracts mentioned consisted primarily of completing nearly all of the landing field extension fill now necessary by placing about 3,825,000 cubic yards of earth fill; completing the paving of the existing prevailing-wind runway (10L-28R) 150 feet wide by 7750 feet long, and of taxiways and warm-up aprons to serve it; constructing a large apron in the present terminal area to accommodate the ever-increasing commercial air transport traffic; constructing the appurtenant field drainage pipes and inlets and other related works.

Proposed New Terminal Building:

Under Contract No. 95, borings were made on the site of the proposed new terminal building and other buildings in the vicinity to secure data to be used in the design of the foundations of buildings. Under a separate contract for professional service, Dames & Moore, consultants in foundation engineering and soil mechanics, supervised the boring contractor's work and prepared an analysis and report on the ground conditions based on information obtained by means of the borings. Mr. W. P. Day, consulting architect, prepared preliminary plans for the terminal building and submitted them to the Public Utilities Commission for approval.

emporary Post Office and Air Cargo Building:

Under Contract 107 a building 65 feet by 245 feet in plan, with utility service xtensions, was constructed to temporarily house the United States Airport Post ffice and the air express and air cargo operations. This building is located about 00 feet northerly of the main entrance from Bayshore Highway to the present dministrative area. Under Contract 108, roads, operational area, automobile arking area and drainage facilities for this building area were constructed. At ie close of the fiscal year the work to be done under Contracts 107 and 108 was bout 75 per cent completed.

ower Service Extensions:

Under Contracts 94 and 106 electric power lines were constructed to meet the creased demands for electrical energy supply to the new United Air Lines 5,000,000 maintenance and overhaul base constructed on the Airport by the rline, and to serve the new Southwest Airways maintenance base established Hangars 1 and 2.

ayshore Freeway:

The new Bayshore Freeway, constructed by the State Division of Highways, ith financial assistance in the amount of $1,250,000 from 1945 Airport Bond nds, along the westerly side of the Airport property, was opened to public use. he interchange structures at Millbrae Avenue, at San Bruno Avenue, and at the ew main entrance to the Airport, are still to be completed. The closing of the ection of the old Bayshore Highway within the Airport limits, and the State's elinquishment of the right of way to the City, makes about 600 acres of much eeded land owned by the City available for airline base and terminal establish- ents and other airport uses. The main entrance to the new terminal area will onnect directly to the traffic interchange structure on the Freeway.

nstrument Landing System (I.L.S.):

The United States Civil Aeronautics Administration completed and placed in ervice a new instrument landing system for the existing main runway in the irection of the prevailing wind (Runway 10L-28R). This is an important step oward making all-weather operation possible at San Francisco Airport.

ivil Aeronautics Administration Project:

An application, supported by complete plans and specifications, was submitted o the United States Civil Aeronautics Administration on May 28, 1948, request- ng a Federal grant of $2,352,606 to assist in financing construction estimated to

cost, under contract, about $4,000,000, for further development of the Airport. The Government has allocated the required funds, and complete Federal approval of the project was given shortly after the end of the fiscal year. Contract 104 for test borings provided basic foundation data for use in designing the structures to be erected under the project, and Contract 109 provides for the construction work to be done. This Federal aid project includes the construction of two runways, each 200 feet wide by 6,000 feet long, one intended for landings parallel to the present takeoff runway in the direction of the prevailing wind, and one in the mean direction of the usual winter storm winds; about 3 miles of taxiways 75 feet wide, to serve the runways being constructed; a field drainage system for these runways and taxiways, and two large pumping plants to deliver the water into San Francisco Bay that cannot be conducted there by gravity; canals through which the storm runoff from the area between the Airport and as far west as Sweeny Ridge west of Skyline Boulevard will divert water around the north and south ends of the Airport, and drainage control gates and bridges over the canals; a large, new water main, consisting primarily of 24-inch and 20-inch pipe, for the main Airport water supply, all of which is now delivered through the existing 12-inch main; main gravity sewers in the new terminal area leading to a new sewage pumping plant, a sewage pumping plant, and about 1½ miles of pressure discharge main leading to the site of the future sewage treatment plant; about 9.2 acres of airplane parking apron for itinerant airplanes, connecting taxiway, service road, and drainage for the area; about 2.4 acres of automobile parking area, and connecting road, west of the present Administration building; the new main Airport entrance road connecting the interchange structure roadways at Bayshore Freeway to the present Bayshore Highway in order to provide access from the Freeway; conduit lines for the greatly increased electrical needs of the expanded Airport; and concrete pipe jackets to be installed, under pavements to be constructed, to provide for future installation of the fog dispersal system (FIDO) pipes.

Anticipating the Federal grant, preparation of plans and specifications for the work was begun early in the fiscal year, and completed in May, 1948. This set of plans and specifications was the most voluminous ever required for any single contract of the Public Utilities Commission. The specifications and the accompanying contract documents comprise 330 pages, and there are 192 contract drawings and 33 additional related drawings, making 225 drawings in all. In addition, a voluminous report on land ownership, comprehensive engineering report, detailed cost estimates, sponsor's assurance agreement and supporting documents, legal opinions, and related documents were prepared as required by CAA regulations, to accompany the application for Federal funds. The cost of the construction work required in this contract is estimated at about $4,000,000. In addition about $140,000 has been and will be expended for materials and equipment (primarily water pipe, drainage pipe, and drainage pumps) to be furnished by the City, for installation by the contractor. The work will be advertised for bids to be received in August, 1948.

IMPROVEMENTS CONSTRUCTED AT SAN FRANCISCO AIRPORT
During Fiscal Year 1947-1948

ntract No.	Contract Title	Contractor	Contract Time Started	Contract Time Completed	Contract Price	Cost of Work Done During Fiscal Year
4	Field Office Building	Wm. McIntosh & Son	12/ 8/47	3/10/48	$13,212.45	$13,212.45
3	Airport Extension Fill, Drainage Work, and Related Construction	Guy F. Atkinson Co.	4/21/47	3/ 1/48	3,745,594.00	2,878,372.71
4	4,000 Volt Electric Power Circuit on Wood Poles	Petersen Eng. Co.	6/30/47	7/29/47	3,798.25	3,798.25
5	Test Borings for New Terminal	J. N. Pitcher	7/14/47	8/26/47	5,770.80	5,770.80
6	Pavement, Drainage and Related Work	Charles L. Harney	8/25/47	2/25/48	953,954.95	953,954.95
7	Flag Pole and Appurtenances	Adam Arras & Son	7/21/47	9/18/47	12,489.90	12,489.90
8	Dredging Channel and Installing South Drainage Gates	A. S. Dutra	9/18/47	10/21/47	15,962.00	15,962.00
9	Reconstructing Portion of Millbrae Outfall Sewer	Guy F. Atkinson Co.	7/12/47	8/12/47	1,722.76	1,722.76
0	Constructing Fence	Anchor Post Fence Co.	8/25/47	9/30/47	562.57	562.57
1	Painting Buildings	D. Zelinsky & Sons	11/17/47	12/23/47	6,638.00	6,638.00
2	Alterations for International Terminal Building	Project Abandoned after Receiving Bids			Bid 1,296.00	.....
3	Constructing Pressure Sewer	Macco & Morrison-Knudsen Co.	12/11/47	1/ 7/48	1,778.40	1,778.40
4	Test Borings for Drainage and Sewerage Structures	J. N. Pitcher	12/ 8/47	1/ 5/48	8,717.80	8,717.80
5	Repairing Roof of Hangar No. 1	A. W. Simmons Co.	11/12/47	11/20/47	300.00	300.00
6	Electric Power Service for Hangar No. 1	Geo. F. Brayer	2/23/48	5/17/48	3,277.00	3,277.00
7	Constructing Post Office Building	Wellnitz & De Narde	4/26/48	8/31/48	53,572.00	47,000.00
8	Paving in Post Office Building Area	L. C. Smith	4/29/48	7/29/48	15,100.47	14,028.00
9	Paving, Drainage, Water Supply, Sewerage, Electrical and Related Work	Morrison-Knudsen Co., Inc.	.....	.....	3,994,844.45	.....
0	Paving on Runway 10L-28R	Charles L. Harney, Inc.	8/ 9/48	.....	19,427.00	.....
1	Constructing Passenger Concourse	Plans and Specifications Transmitted		6/25/48	55,350.00	.....
2	Automobile Parking Area	Plans and Specifications Transmitted		7/1/48	5,913.65	.....

Total Cost of Work Constructed During Fiscal Year 1947-1948.....$3,967,585.59

HETCH HETCHY WATER SUPPLY AND POWER PROJECT
CONSOLIDATED BALANCE SHEET
June 30, 1948

ASSETS AND OTHER DEBITS

	Total	Power	Water
UTILITY PLANT			
Electric Plant	$12,479,649.36	$12,479,649.36	.....
Water Supply Property	93,342,073.25	.....	$93,342,073.2
Construction Work in Progress	.....	.....	.....
Total Utility Plant	$105,821,722.61	$12,479,649.36	$93,342,073.2
Less Reserve for Depreciation	22,640,254.26	5,944,347.00	16,695,907.2
Remainder, Depreciation Value	$83,181,468.35	$6,535,302.36	$76,646,165.9
INVESTMENTS			
Other Physical Property:			
Amazon and Glen Park Reservoir Sites	$458,925.00	.....	$458,925.(
CURRENT AND ACCRUED ASSETS			
Cash on Deposit with Treasurer:			
H. H. Project Operating Fund	$572,088.19	$427,086.33	$145,001.
H. H. Reconstruction and Replacement Fund	844,540.32	675,039.78	169,500.
H. H. Bond Funds	152,797.41	.....	152,797.
Special Deposits with Treasurer:			
H. H. Bond Interest Funds	567,540.00	.....	567,540.
H. H. Bond Redemption Funds	1,017,000.00	.....	1,017,000
1947 H. H. Bond Interest Fund	22,458.29	.....	22,458
H. H. W. S. Real Property Fund	7,231.50	.....	7,231.
Working Funds:			
Revolving Funds	4,000.00	4,000.00	.....
Cash in Transit	1,895.50	1,694.25	201
Accounts Receivable:			
General Debtors	297,407.14	297,407.14	.....
Receivables from Municipality Interfund Accounts, P.S.E.:			
San Francisco Water Department	1,834.64	.....	1,834
San Francisco Airport	102,629.86	.....	102,62
Municipal Railway	15,310.00	.....	15,31(
Public Utilities Commission	69.85	.....	6
Materials and Supplies:			
Electric	21,943.89	21,943.89	.....
Corral Hollow Pipe Line	2,326.42	.....	2,32
Prepayments:			
Tesla Chlorinator Power Line	446.06	.....	44
Public Utilities Commission	5,908.16	2,956.50	2,95
Hetch Hetchy Engineering Bureau	24,408.89	24,408.89	....
Fire Insurance Premium	359,76	.....	35
Total Current and Accrued Assets	$3,662,195.88	$1,454,536.78	$2,207,65
DEFERRED DEBITS			
Stores Clearing Account	$.35	$.35	....
Preliminary Investigations and Surveys	198,089.48	.....	$198,0
Commitments (Contra)	184,893.04	83,580.46	101,3
Work in Progress:			
Accounts Receivable and Interfund	75,071.55	.....	75,0
Replacements	476,268.08	361,972.71	114,2
Other Work in Progress	1,366.58	1,366.58	....
Total Deferred Debits	$935,689.08	$446,920.10	$488,7
Total Assets and Other Debits	$88,238,278.31	$8,436,759.24	$79,801,5

HETCH HETCHY WATER SUPPLY AND POWER PROJECT
CONSOLIDATED BALANCE SHEET
June 30, 1948

LIABILITIES AND OTHER CREDITS

	Total	Power	Water
LONG TERM DEBT			
nds, Municipality:			
ssues 1910 to 1933, Due July 1, 1947 to July 1, 1977	$45,800,000.00	$5,312,800.00	$40,487,200.00
CURRENT AND ACCRUED LIABILITIES			
counts Payable and Commitments:			
Warrants Outstanding	$110,384.70	.....	$110,384.70
General Creditors	76,112.20	$75,789.69	322.51
Payroll Deductions Payable	336.95	.....	336.95
Contract Retentions	5,263.30	.....	5,263.30
Commitments (Contra)	184,893.04	83,580.46	101,312.58
yables to Municipality:			
Interfund Accounts, P.S.E.:			
Municipal Railway	22.75	22.75	.....
Public Utilities Commission	1,094.94	33.77	1,061.17
Interfund Accounts, General City and County:			
Employees' Retirement System	32,086.46	13,496.51	18,589.95
Recreation Department	10.00	10.00	.....
General Fund	117.18	.....	117.18
atured Long Term Debt:			
Matured Bonds not Presented for Payment	17,000.00	.....	17,000.00
atured Interest:			
Matured Coupons not Presented for Payment	53,790.00	.....	53,790.00
terest Accrued Not Due	941,673.11	.....	941,673.11
47 H. H. Bond Interest Accrued	70,675.96	.....	70,675.96
crued Fee—U. S. Government (Raker Act)	15,000.00	.....	15,000.00
crued Auto Insurance Premiums	1,800.00	300.00	1,500.00
Total Current and Accrued Liabilities	$1,510,260.59	$173,233.18	$1,337,027.41
DEFERRED CREDITS			
perating Advances:			
H. H. Power Division (Contra)	$24,408.89	.....	$24,408.89
spense Credits	177.94	.....	177.94
	$24,586.83	.....	$24,586.83
RESERVES			
nployees' Provident Reserve:			
Reserve for Vacations	$13,807.53	.....	$13,807.53
Reserve for Sick Leave	5,564.54	.....	5,564.54
Reserve for Compensation Insurance	17,877.94	.....	17,877.94
eserve for Unclaimed Warrants	12.35	.....	12.35
Total Reserves	$37,262.36	.....	$37,262.36
Total Liabilities	$47,372,109.78	$5,486,033.18	$41,886,076.60
rplus (See Detail Annexed)	$40,866,168.53	$2,950,726.06	$37,915,442.47
OTAL LIABILITIES AND OTHER CREDITS	$88,238,278.31	$8,436,759.24	$79,801,519.07

HETCH HETCHY WATER SUPPLY AND POWER PROJECT
CONSOLIDATED COMPARATIVE INCOME STATEMENT
June 30, 1948

UTILITY OPERATING INCOME	July 1, 1947 to June 30, 1948				July 1, 1946 to June 30, 1947			
	Power	Water	Eliminate Duplications	Consolidated	Power	Water	Eliminate Duplications	Consolidated
Operating Revenue:								
Sales of Electric Energy:								
Commercial and Industrial Sales	$828,949.41	.....	.....	$828,949.41	$964,681.77	.....	.....	$964,681.77
Public Street and Highway Lighting	429,221.90	.....	.....	429,221.90	406,946.11	.....	.....	406,946.11
Other Sales to Public Authorities	611,504.72	.....	.....	611,504.72	513,175.99	.....	.....	513,175.99
Sales to Other Electric Utilities	487,740.08	.....	.....	487,740.08	330,124.67	.....	.....	330,124.67
Sales to Railroads and Railways	1,033,674.15	.....	.....	1,033,674.15	1,103,041.95	.....	.....	1,103,041.95
Other Sales	1,182.01	.....	.....	1,182.01	1,034.27	.....	.....	1,034.27
Total Sales of Electric Energy	$3,392,272.27	.....	.....	$3,392,272.27	$3,319,004.76	.....	.....	$3,319,004.76
Other Electric Revenues	$21,696.66	.....	.....	$21,696.66	$18,352.89	.....	.....	$18,352.89
Water Sales:								
Sale of Water for Power, H.H.P.O.	.....	$1,000,000.00	$1,000,000.00	.....	.....	$813,137.00	$813,137.00	.....
Standby Charge and Sale of Water S.F.W.D.	.....	3,533,700.00	.....	3,533,700.00	.....	3,731,908.00	.....	3,731,908.00
Total Operating Revenues	$3,413,968.93	$4,533,700.00	$1,000,000.00	$6,947,668.93	$3,337,357.65	$4,545,045.00	$813,137.00	$7,069,265.65
Operating Revenue Deductions:								
Operating Expenses:								
Production Expense	$202,270.90	$193,024.47	.....	$395,295.37	$160,367.78	$132,054.43	.....	$292,422.21
Purchase of Water for Power	1,000,000.00	.....	$1,000,000.00	.....	813,137.00	.....	$813,137.00	.....

Purchased Power	169,069.26	.....	.....	169,069.26	87,117.74	.....	.....	87,117.74
Transmission Expense	131,876.71	53,038.93	.....	184,915.64	46,851.21	39,734.12	.....	86,585.33
Distribution Expense	888,344.53	.....	.....	888,344.53	840,260.11	.....	.....	840,260.11
Administrative and General Expense	66,359.11	119,162.52	.....	185,521.63	79,742.59	138,327.20	.....	218,069.79
Total Operating Expenses	$2,457,920.51	$365,225.92	$1,000,000.00	$1,823,146.43	$2,027,476.43	$310,115.75	$813,137.00	$1,524,455.18
Depreciation Expense	$233,812.30	$1,281,167.17	.....	$1,514,979.47	$306,552.18	$1,300,167.37	.....	$1,606,719.55
Taxes (Actually Paid)	.....	16,463.26	.....	16,463.26	.....	21,745.61	.....	21,745.61
Fee to U. S. Government (Raker Act)	.....	30,000.00	.....	30,000.00	.....	30,000.00	.....	30,000.00
Total Operating Revenue Deductions	$2,691,732.81	$1,692,856.35	$1,000,000.00	$3,384,589.16	$2,334,028.61	$1,662,028.73	$813,137.00	$3,182,920.34
Net Operating Revenues	$722,236.12	$2,840,843.65	.....	$3,563,079.77	$1,003,329.04	$2,883,016.27	.....	$3,886,345.31
OTHER INCOME								
Miscellaneous Non-operating Revenue	.....	1,136.69	.....	1,136.69	.....	712.25	.....	712.25
Gross Income	$722,236.12	$2,841,980.34	.....	$3,564,216.46	$1,003,329.04	$2,883,728.52	.....	$3,887,057.56
Interest on Long Term Debt	$247,272.58	$1,884,387.63	.....	$2,131,660.21	$259,141.41	$1,974,836.29	.....	$2,233,977.70
Balance Transferred to Earned Surplus	$474,963.54	$957,592.71	.....	$1,432,556.25	$744,187.63	$908,892.23	.....	$1,653,079.86

HETCH HETCHY WATER SUPPLY AND POWER PROJECT
CONSOLIDATED SURPLUS ACCOUNT
For the Twelve Months Ended June 30, 1948

	Power	Water	Eliminate Duplications	Consolidated
Surplus, June 30, 1947	$2,379,846.47	$37,052,286.92	.....	$39,432,133.39
Additions to Surplus:				
Contributions from Hetch Hetchy Power Division for Equipment—Engineering Bureau	.....	259.14	$259.14	.....
Miscellaneous Additions to Surplus	37,946.01	21,126.90	.....	59,072.91
Miscellaneous Contributions to Surplus	.....	2,162.53	.....	2,162.53
Excess of Book Value over Property Sold or Condemned	.....	2,349.33	.....	2,349.33
Contributions from 1932 Bond Fund for Modesto-Turlock Connection	64,741.11	.....	64,741.11	.....
Reversal of 1946-47 Charge to Surplus—Proceeds of Sale of Land Transferred to S.F.W.D.	.....	2,800.00	.....	2,800.00
Net Profit for Year Ending June 30, 1948	474,963.54	957,592.71	.....	1,432,556.25
Deductions from Surplus:				
Contributions from 1932 Bond Fund to H. H. Power for Modesto-Turlock Irrigation District	.....	64,741.11	64,741.11	.....
Contribution to S. F. Water Department of Corral Hollow Pipe Line Equipment	.....	4,350.00	.....	4,350.00
Contribution to 1947 H. H. Bond Fund for Interest During Construction	.....	48,217.67	.....	48,217.67
Miscellaneous Deductions from Surplus	6,511.93	5,826.28	.....	12,338.21
Contribution to H. H. Water Supply for Engineering Bureau Equipment	259.14	.....	259.14	.....
Surplus, June 30, 1948	$2,950,726.06	$37,915,442.47	.....	$40,866,168.53

Composition of Surplus Cumulative to June 30, 1948

Additions to Surplus:				
Contributions from S. F. W. D. for Bond Interest and Redemption	.....	$2,335,819.00	.....	$2,335,819.00
Grants Earned on Federal Work Projects—H. H. Dam and Moccasin Diversion Works	.....	1,211,450.00	.....	1,211,450.00
Bond Premium 1933 Hetch Hetchy Dam Bonds	.....	137,438.55	.....	137,438.55
Bond Premium 1910-1932 Hetch Hetchy Bond Funds	.....	1,240,169.26	.....	1,240,169.26
Interest Received from Other Funds	.....	77,801.23	.....	77,801.23

Bond Premium 1910 1932 Hetch Hetchy Bond Funds				
Interest Received from Other Funds	.....	77,801.23	.....	77,801.23
Contributions from S.F.W.D. for Reconstruction and Replacements	$1,228.59	28,691.84	.....	29,920.43
Contributions from S.F.W.D. for Operating Expenses	.....	2,104,138.26	.....	2,104,138.26
Contributions through Fund from S.F.W.D. for Bond Interest and Redemption	.....	6,278,591.14	.....	6,278,591.14
Contributions from H.H.P.D. for Reconstruction and Replacements and Equipment	.....	361,961.45	$361,961.45	.....
Contributions from H.H.P.D. for Bond Interest and Redemption and Reconstruction	.....	23,284,425.46	23,284,425.46	.....
Contributions from General Fund for Bond Interest and Redemption	.....	37,286,317.76	.....	37,286,317.76
Contributions from H.H.P.D. to 1932 Bond Fund for Sale of 2 Steel Transmission Towers	.....	250.00	250.00	.....
Miscellaneous Additions to Surplus	64,291.61	59,711.39	.....	124,003.00
Miscellaneous Contributions	.....	2,395.07	.....	2,395.07
Excess of Book Value over Property Sold or Condemned	.....	2,349.33	.....	2,349.33
Contributions from 1932 Hetch Hetchy Bond Fund	115,020.08	.....	115,020.08	.....
Net Earnings from Power Operations, August 16, 1925 to June 30, 1948	26,816,223.05	.....	.....	26,816,223.05
Deductions from Surplus:				
Miscellaneous Deductions from Surplus	7,393.93	21,776.32	.....	29,170.25
Contributions from 1932 H. H. Bond Fund to H.H.P.D. for Reconstruction and Replacement	.....	115,020.08	115,020.08	.....
Cost of Newark-San Lorenzo Pipe Line Transferred to S.F.W.D.	.....	1,063,840.76	.....	1,063,840.76
Retirement Corral Hollow Pipe Line	.....	1,287,161.51	.....	1,287,161.51
Bond Discount, 1910 Hetch Hetchy Bonds	.....	737,956.39	.....	737,956.39
Net Loss from Water Production, July 1, 1935 to June 30, 1948	.....	33,222,094.54	.....	33,222,094.54
Contribution to 1947 H. H. Bond Fund for Interest During Construction	.....	48,217.67	.....	48,217.67
California R. R. Commission Evaluation of P. G. & E. Co.'s San Francisco Properties	392,006.43	.....	.....	392,006.43
Contributions to 1932 H. H. Bond Fund for Sale of 2 Steel Transmission Towers	250.00	.....	250.00	.....
Contributions to H.H.W.S. for Reconstruction and Replacements	361,961.45	.....	361,961.45	.....
Contributions to H.H.W.S. for Bond Interest and Redemption	23,284,425.46	.....	23,284,425.46	.....
Surplus, June 30, 1948	$2,950,726.06	$37,915,442.47	.....	$40,866,168.53

HETCH HETCHY WATER SUPPLY AND POWER PROJECT

STATEMENT OF

ANNUAL BOND INTEREST BY FISCAL YEARS (CASH BASIS)

Interest Maturity Dates	July 1 January 1	July 1 January 1	July 1 January 1	July 1 January 1	December 1 June 1	December 1 June 1	
Rate of Interest	Issue of 1909	Issue of 1910	Issue of 1925	Issue of 1928	Issue of 1932	Issue of 1933	Total
2¾%	.....	.....	.....	.....	$324,000.00	.....	$324,000.00
3%	.....	.....	.....	.....	194,000.00	.....	194,000.00
4%	.....	.....	.....	.....	280,000.00	$3,500,000.00	3,780,000.00
4½%	$600,000.00	$45,000,000.00	.....	$24,000,000.00	143,000.00	.....	69,743,000.00
5%	.....	.....	$10,000,000.00	.....	1,234,000.00	.....	11,234,000.00
5¾%	.....	.....	.....	.....	4,325,000.00	.....	4,325,000.00
Total Issues	$600,000.00	$45,000,000.00	$10,000,000.00	$24,000,000.00	$6,500,000.00	$3,500,000.00	$89,600,000.00
Bond Interest Expense as of June 30, 1947	$72,900.00	$37,187,194.97	$8,130,527.69	$16,435,555.96	$4,609,790.07	$1,100,147.23	$67,536,115.92
Interest Fiscal Year							
1947-48	.....	$765,000.00	$268,750.00	$823,500.00	$243,895.00	$45.500.00	$2,146,645.00
1948-49	.....	720,000.00	256,250.00	796,500.00	233,077.50	38,500.00	2,044,327.50
1949-50	.....	675,000.00	243,750.00	769,500.00	222,260.00	31,500.00	1,942,010.00
1950-51	.....	630,000.00	231,250.00	742,500.00	211,442.50	24,500.00	1,839,692.50
1951-52	.....	585,000.00	218,750.00	715,500.00	200,625.00	17,500.00	1,737,375.00
1952-53	.....	540,000.00	206,250.00	688,500.00	189,872.50	10,500.00	1,635,122.50
1953-54	.....	495,000.00	193,750.00	661,500.00	179,120.00	3,500.00	1,532,870.00
	.....	450,000.00	181,250.00	634,500.00	168,367.50	.....	1,434,117.50

1955-56	.....	405,000.00	168,750.00	607,500.00	157,615.00	.....	1,338,865.00
1956-57	.....	360,000.00	156,250.00	580,500.00	146,862.50	.....	1,243,612.50
1957-58	.....	315,000.00	143,750.00	553,500.00	136,110.00	.....	1,148,360.00
1958-59	.....	270,000.00	131,250.00	526,500.00	125,360.00	.....	1,053,110.00
1959-60	.....	225,000.00	118,750.00	499,500.00	114,610.00	.....	957,860.00
1960-61	.....	180,000.00	106,250.00	472,500.00	103,860.00	.....	862,610.00
1961-62	.....	135,000.00	93,750.00	445,500.00	93,110.00	.....	767,360.00
1962-63	.....	90,000.00	81,250.00	418,500.00	82,360.00	.....	672,110.00
1963-64	.....	45,000.00	68,750.00	391,500.00	71,610.00	.....	576,860.00
1964-65	.....	.....	56,250.00	364,500.00	61,377.50	.....	482,127.50
1965-66	.....	.....	43,750.00	337,500.00	51,895.00	.....	433,145.00
1966-67	.....	.....	31,250.00	310,500.00	42,412.50	.....	384,162.50
1967-68	.....	.....	18,750.00	283,500.00	32,930.00	.....	335,180.00
1968-69	.....	.....	6,250.00	256,500.00	23,447.50	.....	286,197.50
1969-70	.....	.....	.....	229,500.00	13,965.00	.....	243,465.00
1970-71	.....	.....	.....	202,500.00	4,482.50	.....	206,982.50
1971-72	.....	.....	.....	175,500.00	.....	.....	175,500.00
1972-73	.....	.....	.....	148,500.00	.....	.....	148,500.00
1973-74	.....	.....	.....	121,500.00	.....	.....	121,500.00
1974-75	.....	.....	.....	94,500.00	.....	.....	94,500.00
1975-76	.....	.....	.....	67,500.00	.....	.....	67,500.00
1976-77	.....	.....	.....	40,500.00	.....	.....	40,500.00
1977-78	.....	.....	.....	13,500.00	.....	.....	13,500.00
Totals	$72,900.00	$44,072,194.97	$11,155,527.69	$29,409,055.96	$7,520,457.57	$1,271,647.23	$93,501,783.42

HETCH HETCHY WATER SUPPLY AND POWER PROJECT
STATEMENT OF
ANNUAL BOND REDEMPTION BY FISCAL YEARS (CASH BASIS)

Redemption Dates / Rate of Interest	July 1 1909	July 1 1910	January 1 1925	July 1 1928	June 1 1932	December 1 1933	Total
	Issue of						
2¾%	.....	.....	.....	.....	$324,000.00	.....	$324,000.00
3%	.....	.....	.....	.....	194,000.00	.....	194,000.00
4%	.....	.....	.....	.....	280,000.00	$3,500,000.00	3,780,000.00
4½%	$600,000.00	$45,000,000.00	.....	$24,000,000.00	143,000.00	.....	69,743,000.00
5%	.....	.....	$10,000,000.00	.....	1,234,000.00	.....	11,234,000.00
5¾%	.....	.....	.....	.....	4,325,000.00	.....	4,325,000.00
Total Issues	$600,000.00	$45,000,000.00	$10,000,000.00	$24,000,000.00	$6,500,000.00	$3,500,000.00	$89,600,000.00
Bonds Matured as of June 30, 1947	$600,000.00	$28,000,000.00	$4,500,000.00	$5,400,000.00	$1,800,000.00	$2,275,000.00	$42,575,000.00
Annual Redemption Fiscal Year							
1947-48	.....	$1,000,000.00	$250,000.00	$600,000.00	$200,000.00	$175,000.00	$2,225,000.00
1948-49	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00
1949-50	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00
1950-51	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00
1951-52	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00
1952-53	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00
1953-54	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	175,000.00	2,225,000.00
1954-55	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	2,050,000.00

1954-55	.....	.....	.....	.....	.....	.....	.....
1955-56	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	2,050,000.00
1956-57	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	2,050,000.00
1957-58	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	2,050,000.00
1958-59	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	2,050,000.00
1959-60	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	2,050,000.00
1960-61	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	2,050,000.00
1961-62	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	2,050,000.00
1962-63	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	2,050,000.00
1963-64	.....	1,000,000.00	250,000.00	600,000.00	200,000.00	.....	2,050,000.00
1964-65	.....	.....	250,000.00	600,000.00	200,000.00	.....	1,050,000.00
1965-66	.....	.....	250,000.00	600,000.00	200,000.00	.....	1,050,000.00
1966-67	.....	.....	250,000.00	600,000.00	200,000.00	.....	1,050,000.00
1967-68	.....	.....	250,000.00	600,000.00	200,000.00	.....	1,050,000.00
1968-69	.....	.....	250,000.00	600,000.00	200,000.00	.....	1,050,000.00
1969-70	.....	.....	.....	600,000.00	200,000.00	.....	800,000.00
1970-71	.....	.....	.....	600,000.00	100,000.00	.....	700,000.00
1971-72	.....	.....	.....	600,000.00	.....	.....	600,000.00
1972-73	.....	.....	.....	600,000.00	.....	.....	600,000.00
1973-74	.....	.....	.....	600,000.00	.....	.....	600,000.00
1974-75	.....	.....	.....	600,000.00	.....	.....	600,000.00
1975-76	.....	.....	.....	600,000.00	.....	.....	600,000.00
1976-77	.....	.....	.....	600,000.00	.....	.....	600,000.00
1977-78	.....	.....	.....	600,000.00	.....	.....	600,000.00
Totals	$600,000.00	$45,000,000.00	$10,000,000.00	$24,000,000.00	$6,500,000.00	$3,500,000.00	$89,600,000.00

HETCH HETCHY POWER DIVISION
SCHEDULE No. 1
ELECTRIC PLANT IN SERVICE
June 30, 1948

		Balance June 30, 1947	Gross Additions July 1, 1947 June 30, 1948	Retirements July 1, 1947 June 30, 1948	Adjustments July 1, 1947 June 30, 1948	Balance June 30, 1948	Accrued Depreciation June 30, 1948
1001-A	HYDRAULIC PRODUCTION PLANT						
320	Land and Land Rights	$53,903.00	.....	.....	.....	$53,903.00	.....
321	Structures and Improvements	842,451.00	.....	.....	.....	842,451.00	$335,243.40
322	Reservoirs, Dams and Waterways	6,610,232.55	.....	.....	.....	6,610,232.55	2,551,918.45
323	Waterwheels, Turbines and Generators	936,307.63	.....	.....	.....	936,307.63	655,599.70
324	Accessory Electric Equipment	128,669.00	.....	.....	.....	128,669.00	102,994.54
325	Miscellaneous Power Plant Equipment	19,139.40	.....	.....	.....	19,139.40	15,502.02
326	Roads, Railroads and Bridges	20,203.00	.....	.....	.....	20,203.00	.....
		$8,610,905.58	.....	.....	.....	$8,610,905.58	$3,661,258.11
1001-B	TRANSMISSION PLANT						
340	Land and Land Rights	$49,677.00	$622.99	.....	.....	$50,299.99	.....
341	Clearing Lands and Rights of Way	38,212.00	.....	.....	.....	38,212.00	.....
342	Structures and Improvements	18,880.00	64,118.12	.....	.....	82,998.12	$10,162.40
343	Station Equipment	578,543.20	.....	.....	.....	578,543.20	388,093.57
344	Towers and Fixtures	871,432.00	.....	.....	.....	871,432.00	491,008.60
346	Overhead Conductors and Devices	[illegible]		.....	.....	39,232.00	39,232.00

346	Overhead Conductors and Devices	1,050,679.41	.....	$6,132.83	.....	1,044,546.58	888,628.72
347	Underground Conduit	657.00	.....	.....	.....	657.00	604.80
348	Underground Conductors and Devices	1,115.00	.....	.....	.....	1,115.00	802.50
349	Roads and Trails	.....	.....	.....	.....	.....	.....
		$2,648,427.61	$64,741.11	$6,132.83	.....	$2,707,035.89	$1,818,532.59
1001-B-1	DISTRIBUTION PLANT						
360	Meters	$3,848.10	.....	$3,848.10	.....	.....	.....
1001-C	GENERAL PLANT						
370	Land and Land Rights	$1,128.00	.....	.....	.....	$1,128.00	.....
371	Structures and Improvements	727,956.35	$2,154.47	$4,029.00	.....	726,081.82	$408,268.48
372	Office Furniture and Equipment	3,924.00	.....	.....	.....	3,924.00	3,579.32
373	Transportation Equipment	15,196.44	.....	.....	.....	15,196.44	12,136.74
375	Shop Equipment	32,081.33	1,373.76	.....	.....	33,455.09	25,830.01
377	Tools and Work Equipment	4,746.41	.....	.....	.....	4,746.41	4,405.84
378	Communication Equipment	548.65	.....	.....	.....	548.65	104.31
379	Miscellaneous Equipment	11,346.81	1,874.83	.....	.....	13,221.64	10,231.60
395	Unclassified	363,405.84	.....	.....	.....	363,405.84	.....
		$1,160,333.83	$5,403.06	$4,029.00	.....	$1,161,707.89	$464,556.30
		$12,423,515.12	$70,144.17	$14,009.93	.....	$12,479,649.36	$5,944,347.00
	See Schedule		1A	1A			1B

SCHEDULE No. 1-A
HETCH HETCHY POWER DIVISION
June 30, 1948

Gross Additions July 1, 1947 to June 30, 1948

1001-B	TRANSMISSION PLANT	
	340 LAND AND LAND RIGHTS	
	Land Acquired for Erection of Station J	$622.99
	342 STRUCTURES AND IMPROVEMENTS	
	Station "J"—Modesto-Turlock Irrigation District Installation	64,118.12
1001-C	GENERAL PLANT	
	371 STRUCTURES AND IMPROVEMENTS	
	Four Electric Wall Heaters for Intake Cottages 1, 2, 3, 4	234.20
	Emergency Camp Water Supply at Intake	1,920.27
	375 SHOP EQUIPMENT	
	Presto Tire Demounter for Moccasin Machine Shop	116.22
	Sumner Crankshaft Grinder for Moccasin Machine Shop	829.53
	Bench Tool Grinder for Moccasin Carpenter Shop	98.58
	Floor Sander for Moccasin Carpenter Shop	329.43
	379 MISCELLANEOUS EQUIPMENT	
	Water Cooler for Moccasin Dormitory	248.83
	Metering Equipment removed from Riverbank Installation and stored at San Francisco and Moccasin carried at Salvage Value of	1,626.00
	Total Gross Additions	$70,144.17

Retirements July 1, 1947 to June 30, 1948

1001-B	TRANSMISSION PLANT	
	346 OVERHEAD CONDUCTORS AND DEVICES	
	Sectionalizing Switches re: Riverbank Installation	$6,132.83
1001-B-1	DISTRIBUTION PLANT	
	360 METERS	
	Metering Equipment re: Riverbank Installation	3,848.10
1001-C	GENERAL PLANT	
	371 STRUCTURES AND IMPROVEMENTS	
	Riverbank Warehouse Dismantled	4,029.00
	Total Retirements	$14,009.93

SCHEDULE No. 1
HETCH HETCHY WATER SUPPLY
FIXED CAPITAL IN SERVICE

June 30, 1948

Account Number		Balance June 30, 1947	Gross Additions	Retirements	Adjustments	Balance June 30, 1948	Accrued Depreciation
1010-C2	Franchises and Water Rights	$2,735,630.00	.....	.....	.....	$2,735,630.00	.....
1015-C5	Landed Capital:						
A	Source of Water Supply Land	172,163.00	.....	.....	.....	172,163.00	.....
D	Right of Way Land	618,236.76	.....	.....	$1,915.33	620,152.09	.....
E	General Office and Other Lands	68,450.00	.....	$216.00	.....	68,234.00	.....
F	Roads, Trails and Tramways (Incl. H. H. Railroad)	919,148.99	.....	.....	.....	919,148.99	$312,971.00
		$1,777,998.75	.....	$216.00	$1,915.33	$1,779,698.08	$312,971.00
1020-C6	Buildings, Structures and Grounds:						
A	Source of Water Supply Buildings and Fixtures	$143,169.21	$1,082.96	.....	.....	$144,252.17	$62,357.25
B	Pumping Stations, Buildings and Fixtures	11,014.00	.....	.....	.....	11,014.00	3,579.50
C	Purification, Buildings and Fixtures	28,210.00	.....	.....	.....	28,210.00	5,557.00
D	General Office and Other Buildings and Fixtures	1,250.00	.....	.....	.....	1,250.00	427.10
		$183,643.21	$1,082.96	.....	.....	$184,726.17	$71,920.85
1025-C7	Impounding Dams and Reservoirs	16,349,162.33	.....	.....	.....	16,349,162.33	2,197,595.52
C8	Lake and River Cribs	747,423.15	.....	.....	.....	747,423.15	103,315.10
C13	Canals and Conduits	71,240,433.73	.....	.....	.....	71,240,433.73	13,856,637.42
		$88,337,019.21	.....	.....	.....	$88,337,019.21	$16,157,548.04
1030-C14	Pumping Equipment	$24,521.00	.....	.....	.....	$24,521.00	$15,938.50
1035-C16	Purification Capital	$37,207.00	.....	.....	.....	$37,207.00	$16,310.60
1045-C24	General Equipment:						
A	General Office Equipment	$7,363.45	$5,108.77	$1,074.70	.....	$11,397.52	$2,713.40
D	General Stable and Garage Equipment	58,980.41	12,496.95	6,784.02	.....	64,693.34	39,829.24
E	General Construction Equipment	50,320.35	.....	.....	.....	50,320.35	37,933.62
F	Railroad Rolling Stock	14,004.00	4,047.98	.....	.....	18,051.98	14,004.00
G	Communication System Equipment	43,690.00	.....	.....	.....	43,690.00	23,930.40
H	Other Equipment	5,945.31	.....	.....	.....	5,945.31	2,807.61
		$180,303.52	$21,653.70	$7,858.72	.....	$194,098.50	$121,218.27
1049-C24J	General Capital Unclassified	$53,297.00	.....	.....	.....	53,297.00	.....
1050-C25	Undistributed Construction Expenditures:						
A	Engineering Superintendence	$1,639.83	.....	.....	.....	$1,639.83	.....
F	Undistributed Construction Expenditures	*5,763.54*	.....	.....	.....	*5,763.54*	.....
		$4,123.71	.....	.....	.....	*$4,123.71*	.....
		$93,325,495.98	$22,736.66	$8,074.72	$1,915.33	$93,342,073.25	$16,695,907.26

Italic figures denote loss and deficiency.

SCHEDULE No. 1-A
HETCH HETCHY WATER SUPPLY
GROSS ADDITIONS
June 30, 1948

1020-C6	BUILDINGS, STRUCTURES AND GROUNDS		
	Skidway for Barge in Hetch Hetchy Reservoir		$1,082.96
1045-C24A	GENERAL OFFICE EQUIPMENT		
	One Chaindex Cross Reference Cabinet for Library at Mason St.	$415.82	
	Twelve Filing Cabinets for Library at Mason St. (Letter size)	987.94	
	Six Filing Cabinets for Library at Mason St. (Legal size)	577.67	
	Two Posture Chairs for Room 505, Mason Street	66.89	
	Five Typewriter Desks for Room 501, Mason Street	618.85	
	Two Draftsmen's Stools for 901 Presidio Avenue	34.63	
	Two Draftsmen's Tables for 901 Presidio Avenue	321.85	
	One Sorting Tray for Room 501, Mason Street	17.43	
	One Victor Portable Adding Machine for 901 Presidio Avenue	202.95	
	Two Monroe Electric Calculating Machines, Mason Street	1,014.75	
	One Royal Typewriter, Mason Street	190.00	
	One Underwood Typewriter, Mason Street	124.12	
	One Underwood Typewriter, Mason Street	124.12	
	One Underwood Typewriter, Mason Street	124.12	
	One Underwood Typewriter, Oakdale, Calif.	123.51	
	Two Paper Punch, Mason Street	26.27	
	One Royal Typewriter, Mason Street	137.85	5,108.77
1045-C24D	GENERAL STABLE AND GARAGE EQUIPMENT		
	One Ford Panel Truck No. HH 3-B	$1,621.50	
	One Chevrolet Pickup Truck No. HH 5-A	1,253.01	
	One Chevrolet Pickup Truck No. HH 7-B	1,253.01	
	One Ford Sedan No. HH 12C	1,418.75	
	One Chevrolet Stake Truck No. HH 17-A	3,059.88	
	One Chevrolet Chassis and Cab No. HH 112A	1,945.40	
	One Chevrolet Chassis and Cab No. HH 114-A	1,945.40	12,496.95
1045-C24F	RAILROAD ROLLING STOCK		
	Tucker "Sno-Cut" Snow Sled No. HH 91		4,047.98
			$22,736.66

SCHEDULE No. 1-B
HETCH HETCHY WATER SUPPLY
RETIREMENTS
June 30, 1948

1015-C5E	GENERAL OFFICE AND OTHER LANDS		
	Block 25, Dumbarton Tract, Portion of Lots No. 24, 25, 26 and 27. Sold for $650.00, carried at $216.00		$216.00
1045-C24A	GENERAL OFFICE EQUIPMENT		
	Burroughs Adding Machine traded in on Victor	$55.00	
	Two Monroe Calculators traded in on new Monroe	1,019.70	1,074.70
1045-C24D	GENERAL STABLE AND GARAGE EQUIPMENT		
	International Pickup Truck No. HH 5 traded on No. HH 5-A	$733.00	
	International Pickup Truck No. HH 7 traded on No. HH 7-B	733.00	
	Equipment No. 112 traded on Ford No. HH 112-A	1,466.00	
	Chevrolet Dump Truck No. 114 traded on No. HH 114-A	1,226.00	
	Equipment No. 3A Ford Panel Truck retired	917.73	
	Equipment No. 17 Ford Truck retired	868.46	
	1941 Chevrolet Coupe No. 12A retired	839.83	6,784.02
			$8,074.72
	ADJUSTMENTS		
1015-C5D	RIGHT OF WAY LAND		
	Land Retired in 1945-1946 at $2,800.00	$2,800.00	
	Should have been retired at $884.67	884.67	
			$1,915.33

HETCH HETCHY WATER SUPPLY
1932 HETCH HETCHY BOND FUND APPROPRIATIONS
Period Ended June 30, 1948

Appropriation Number		Appropriated	Expenditures	Encumbrances	Total Expenditures and Encumbrances	Unencumbered Balance of Appropriation
92.000.00	Unappropriated Balance of Funds	$96,977.24	.....	.....	.....	$96,977.24
.234.7/2	Possible Future Expense in Connection with Industrial Cases	2,000.00	$1,469.69	.....	$1,469.69	530.31
.235.01	Balance—General and Miscellaneous	16.66	.....	.....	.....	16.66
.298.00	Possible Future Expense with State Sales Tax on Sales Hetch Hetchy Construction Equipment	3,500.00	3,364.69	.....	3,364.69	135.31
.402.98	Furniture for Engineers—S.J.P.L. No. 2	1,000.00	899.86	.....	899.86	100.14
.500.38	Debris Deflector, Lower Cherry Diversion Dam	2,000.00	262.15	.....	262.15	1,737.85
.500.50	Surveys, Studies and Preliminary Plans for Dams, Aqueducts and other features of Cherry River Development	100,000.00	98,266.40	.....	98,266.40	1,733.60
.500.51	Preliminary Investigations, Surveys and Improvements, Cherry River Development Project	100,000.00	75,299.59	$10,500.00	85,799.59	14,200.41
.500.57	Purchase and Installation of Equipment in connection with Contract with Modesto and Turlock Irrigation Districts	73,500.00	63,206.93	9.435.84	72,642.77	857.23
.500.58	Acquisition of Land for connection between Hetch Hetchy Transmission Lines and Modesto Irrigation District Power System	1,000.00	622.99	250.00	872.99	127.01
.604.09	Expenses Incurred Resisting Claims on Riparian Owners and Land Damage Claims	2,859.09	.....	.....	.....	2,859.09
.900.56	Preliminary Engineering S.J.P.L. No. 2	7,500.00	.....	7,500.00	7,500.00	.....
		$390,352.99	$243,392.30	$27,685.84	$271,078.14	$119,274.85
	Expenditures	243,392.30				
		$146,960.69				
	Warrants Outstanding	5,836.72				
	Treasurer's Balance	$152,797.41				

HETCH HETCHY WATER SUPPLY, POWER AND UTILITIES ENGINEERING BUREAU
YEARLY REPORT—AUTOMOTIVE EQUIPMENT OPERATIONS

During the Period July 1, 1938 to June 30, 1948

Equip. No.	Year	Description	Mileage	Gasoline Gallons	Gasoline Miles per Gal.	Oil Quarts	Oil Miles Per Qt.	Cost of Oper. & Mtce. Amount	Cost of Oper. & Mtce. Cost per Mile	Depreciation Amount	Depreciation Cost Per Mile	Insurance Amount	Insurance Cost per Mile	Total Cost	Total Cost per Mile
		PASSENGER CARS													
1-B	1942	Oldsmobile Club Coupe.....	54,186	3,478	15.5796	154	351.85	$1,220.99	$.02253	$1,361.82	$.0251	$132.40	$.0025	$2,715.21	$.0501
2-B	1941	Chevrolet Master Coupe De Luxe.	62,313	3,913	15.9246	237	262.92	1,564.57	.02511	818.07	.0131	155.71	.0025	2,538.35	.0407
8-A	1941	Chevrolet Tudor Sedan.....	11,398	1,343	8.4870	74	154.03	594.24	.05214	1,026.66	.0901	149.91	.0132	1,770.81	.1554
9-B	1942	Chevrolet 4-door Sedan De Luxe..	62,633	3,786	16.5433	252	248.54	2,659.10	.04246	1,068.11	.0171	162.39	.0026	3,889.60	.0621
10-A	1942	Chevrolet Sport Sedan De Luxe...	72,067	4,267	16.8894	344	209.49	1,653.31	.02294	1,046.94	.0145	145.70	.0020	2,845.95	.0350
12-C	1947	Ford Sedan Coupe Super De Luxe.	11,785	755	15.6093	57	206.75	209.73	.01780	.....	....	38.14	.0032	247.87	.0210
16-A	1938	Packard Super 8 Sedan.....	.....	.....	.....	....	.....	.....	.....	.....	....	.....	....	.....	....
22	1946	Cadillac Sedan 4-door.....	25,714	1,477	17.4096	39	659.33	932.46	.03626	1,126.32	.0438	59.48	.0023	2,118.26	.0284
31-A	1942	Nash Coupe	34,733	1,939	17.9128	109	318.65	536.36	.01544	914.44	.0263	113.20	.0033	1,564.00	.0450
209-B	1942	Ford V8 Sedan Mercury.....	27,808	2,170	12.8148	72	386.22	592.85	.021319	1,052.18	.0378	162.41	.0058	1,807.44	.0650
211	1942	Ford V8 Sedan.....	94,593	6,996	13.5210	308	307.12	2,751.44	.029087	981.69	.0104	110.08	.0012	3,843.21	.0406
212	1942	Ford Fordor Sedan De Luxe.....	67,142	4,994	13.5805	229	293.19	1,700.59	.025328	1,064.49	.0159	142.45	.0021	2,907.53	.0433
214	1942	Ford Fordor Sedan.....	19,491	1,687	11.5537	157	124.15	1,096.36	.052495	1,068.32	.0548	135.46	.0070	2,300.14	.1180
220	1946	Ford Fordor Sedan.....	19,381	1,122	17.2736	53	365.68	349.32	.0180239	300.00	....	70.29	.0036	719.61	....
225	1942	Pontiac 8 Torpedo Sedan.....	76,848	5,384	14.2734	160	480.30	2,189.16	.028487	1,243.18	.0162	135.66	.0018	3,568.00	.0464
226	1942	Pontiac 8 Torpedo Sedan.....	79,103	5,531	14.3018	223	354.72	3,579.68	.045253	1,243.18	.0157	134.83	.0016	4,947.69	.0625
227	1942	Pontiac 8 Torpedo Sedan.....	39,251	2,639	14.8734	195	201.28	1,305.52	.033261	1,299.74	.0331	124.83	.0032	2,730.09	.0696
228	1942	Chevrolet Sportsmaster Sedan....	71,438	4,263	16.7577	341	209.49	2,705.06	.037866	1,096.06	.0153	117.96	.0017	3,919.08	.0549
229	1942	Chevrolet Spl Sport Sedan.....	62,997	3,185	19.7793	128	492.16	2,273.09	.03683	1,226.47	.0195	119.45	.0019	3,619.01	.0575
		Total and Average.....	892,881	58,929	15.1647	3,132	285.08	$27,913.83	$.0313	$17,937.67	$.0201	$2,200.35	$.0025	$48,051.85	$.0530
		STATION WAGONS AND CARRYALLS													
3-B	1948	Ford Panel Truck.....	13,891	1,284	10.8185	80	173.638	$1,268.25	$.091301	.....	....	$30.86	$.0022	$1,299.11	$.0935
210	1941	Chevrolet Suburban Carryall.....	55,684	4,573	12.1767	300	185.613	4,083.95	.073342	$880.95	$.0158	143.30	.0026	5,108.20	.0917
213	1942	Ford Station Wagon.....	31,808	3,384	9.3995	162	196.346	2,120.90	.066678	1,311.70	.0412	140.25	.0044	3,572.85	.1123

215	1942 Ford Station Wagon.....	68,034	4,853	14.0190	253	268.909	2,735.92	.040214	1,318.14	.0194	140.41	.0021	4,194.47	.0616
216	1942 Ford Station Wagon.....	24,908	2,609	9.547	121	205.851	2,340.99	.093985	1,311.70	.0527	140.25	.0056	3,792.94	.1523
217	1942 Ford Station Wagon.....	25,581	2,901	8.818	235	108.855	1,863.81	.078592	1,283.10	.0502	140.51	.0055	3,287.42	.1285
	Total and Average.....	219,906	19,604	11.2174	1,151	191.06	$14,413.82	$.0656	$6,105.59	$.0278	$735.58	$.0034	$21,254.99	$.0979
	PICKUP TRUCKS AND CANOPY EXPRESS													
4-B	1941 Chevrolet ½-ton Canopy Express.	43,982	3,666	12.00	242	181.74	$2,954.75	$.0672	$779.32	$.0177	$113.29	$.0026	$3,847.36	$.0875
5-A	1948 Chevrolet ½-ton Pickup Truck...	2,253	161	14.00	8	281.63	168.89	.0750	.....	....	29.94	.0133	198.83	.0883
6-A	1941 Chevrolet ½-ton Pickup.....	25,082	2,524	9.94	198	126.68	893.93	.0356	673.09	.0269	140.27	.0056	1,707.29	.0681
7-B	1948 Chevrolet ½-ton Truck.....	2,486	176	14.13	13	191.23	110.27	.0444	.....	....	29.94	.0124	140.21	.0564
11-C	1946 Chevrolet 1-ton Pickup.....	36,811	2,332	15.79	152	242.18	930.80	.0529	644.57	.0175	55.87	.0015	1,631.24	.0443
13-A	1941 Ford V8 ¾ Cab Express.....	55,164	5,524	9.99	442	124.81	1,983.19	.0360	822.94	.0149	145.34	.0026	2,951.47	.0535
14-A	1942 Chevrolet ½-ton Pickup.....	57,657	4,233	13.62	287	200.90	2,291.42	.0400	722.33	.0125	126.64	.0022	3,140.39	.0545
18-A	1947 Ford Pickup Truck.....	10,009	1,009	9.92	74	135.26	242.47	.0242	195.64	.0196	35.54	.0036	473.65	.0473
106	1920 White ¾-ton Truck.....	1,487	645	2.31	43	34.58	623.88	.0420	100.00	.0672	179.57	.0121	903.45	.0608
208-B	1947 Dodge 1½-ton Pickup.....	9,585	712	13.46	44	217.84	142.72	.0149	109.99	.0115	35.81	.0037	288.52	.0301
218	1939 Dodge 1-ton Pickup.....	27,014	3,029	8.92	197	137.13	3,083.79	.1142	602.55	.0223	112.56	.0042	3,798.90	.1410
219	1941 Chevrolet ½-ton Pickup.....	55,930	4,539	12.32	325	172.09	2,170.86	.0389	978.50	.0175	106.84	.0019	3,256.20	.0582
103-A	1941 Chevrolet 1-ton Pickup.....	53,549	3,296	16.25	274	195.43	2,339.39	.0437	752.93	.0141	142.87	.0027	3,235.19	.0604
	Total and Average.....	381,009	31,846	11.96	2,299	165.73	$17,936.36	$.0408	$6,381.86	$.0168	$1,254.48	$.0033	$25,572.70	$.0671
	TRUCKS													
17-A	1947 Chevrolet Stake Side Truck.....	4,618	452	10.22	21	219.91	$182.21	$.0395	.....	....	$29.94	$.0065	$212.15	$.0459
50–51	1946 F.W.D. Tractor and Trailmobile..	7,206	2,524	2.85	81	88.96	2,595.70	.3602	$3,941.62	$.5470	58.89	.0082	6,596.21	.9154
108	1920 White 5-ton Truck.....	4,502	2,255	2.00	235	19.16	2,206.25	.4901	150.00	.0333	381.44	.0714	2,677.69	.5948
112-A	1948 Chevrolet 6 Chassis and Cab.....	1,272	158	8.05	9	141.33	285.12	.0224	.....	....	29.94	.0235	315.06	.2477
114-A	1948 Chevrolet 2-ton Truck.....	689	75	9.19	6	114.83	270.31	.0392	.....	....	29.94	.0435	300.25	.4358
120	1924 White 2-ton Truck.....	6,909	2,138	3.23	244	28.32	1,019.91	.1476	200.00	.0290	312.40	.0452	1,532.31	.2218
121	1924 White 2-ton with Winch.....	13,580	4,284	3.17	179	75.87	2,850.57	.2099	640.00	.0471	254.40	.0187	3,744.97	.2758
200	1936 F.W.D. 4-5 ton.....	33,488	10,218	3.28	590	56.76	9,298.74	.2777	4,809.00	.1436	411.01	.0123	14,518.75	.4336
201	1938 F.W.D. 2½-3 ton Line.....	66,070	13,380	4.94	1,187	55.66	8,486.48	.1285	4,141.00	.0627	353.11	.0534	12,980.59	.1965
202	1936 F.W.D. 1-1½ ton Line.....	41,266	10,937	3.77	672	61.41	8,794.41	.2131	3,062.00	.0742	235.41	.0571	12,091.82	.2930
206-A	1947 Chevrolet 1-ton Pickup.....	3,205	444	7.22	29	110.52	148.59	.0463	113.54	.0354	39.29	.0123	301.42	.0941
		182,805	46,865	3.90	3,253	56.20	$36,138.29	$.1977	$17,057.16	$.0933	$2,075.77	$.0114	$55,271.22	$.3024
	Total and Average Entire Fleet.....	1,676,601	157,244	10.67	9,835	170.47	$96,402.30	$.0575	$47,482.28	$.0283	$6,266.18	$.0038	$150,150.76	$.0896

20-FOOT UPRIGHT ELECTROLIER AFTER CONVERSION TO PENDENT TYPE.

BUREAU OF LIGHT, HEAT AND POWER

B. A. DEVINE

Manager and Chief Engineer

1947-1948 ANNUAL REPORT

B. A. DEVINE
Manager and Chief Engineer

The functions of this Bureau include in addition to the design, construction and operation of the street lighting system, the purchase of utility services for all departments of the city. The Bureau therefore controls yearly disbursements of approximately two and three-quarter million dollars of city funds.

These functions are under the management of Mr. B. A. Devine, assisted by Mr. G. W. Dolen in charge of street lighting operation and maintenance; Mr. W. C. Eggert in charge of electrical design and construction; and Mr. E. W. Balzer in charge of gas and electric supply. Much of the credit for efficient operation of the Bureau must go to these men.

The year's expenditures for gas and electricity, and for street lighting, are shown in Table No. 1. Special attention may be called to the engineering, supervision and office expense cost, which is but 2.16% of the total.

Street Lighting Operation:

During the year 464 new lights were installed in the various districts throughout the city.

With 14 major street lighting contracts entered into during the fiscal year, and the development of new streets and housing projects, the number of new lights will be greater than the 1947-48 period.

At the close of the year, 25,777 lights were in service, of which 4,289 were city-owned, 2,320 jointly owned, and 19,168 owned by the Pacific Gas and Electric Company.

Table No. 1 shows a total expenditure of $835,229.27 for street lighting operations during the year. This total includes operation and maintenance costs for all lighting equipment in streets, parks, viaducts, tunnels and underpasses. The decrease from last year's expenditure of $838,758.65 was due to collections for damaged street lights and to purchases being made for automotive equipment.

The number of requests received by this Bureau for improved street lighting

FROM KEY STREET.

THIRD STREET, SOUTH FROM KEY STREET.
After installation of modern-type pendent lights.

decreased from 140 in 1946-47 to 119 at the end of June, 1948. This decrease was due to lack of material for building new homes.

Requests for shades on the house-side of lights were discouraged, because this tends to reduce street illumination by eliminating light reflected from buildings upon the sidewalk and street area.

With the cooperation of the Police Department, interested citizens and the Pacific Gas and Electric Company, and also inspections by this Bureau, the number of lights reported out totaled 44,962, representing a saving of $4,401.01 in outage credits.

All records of installations and revisions made during the fiscal year were entered on our record cards and maps by the end of July, 1948.

Table V shows collections made for damage to city-owned street lights during the 1947-48 period, amounting to $5,109.30, of which this Bureau collected $4,-296.20, an increase of $1,909.35 over the year 1946-47. No accounts were abandoned as uncollectible.

Table IX shows street lighting operations by months. Energy cost of $396,-407.46 was paid to Hetch Hetchy and $436,155.10 was paid to the Pacific Gas and Electric Company for maintenance and fixed charges.

Table X shows the number and type of street lights in use and their ownership, both underground- and overhead-connected.

Engineering Construction:

The following street lighting contracts, which were entered into during 1946-47, were completed during this year:

Cont. No.	Location
46	Guerrero St., Market St. to Army St.
47	Fell St., Baker St. to Stanyan St.
48	Third St., Alameda St. to Mariposa St.
50	Union Square Garage.
52	Lyon, Baker and Bay Sts., Lombard St. to Marina Blvd.
54	Clipper St. Extension, Douglass St. to Portola Dr.
56	Powell St., California St. to Broadway
57	Golden Gate Park Crossover and Bypass Drive.

Lighting projects completed during the year which were initiated by the Department of Public Works, are as follows:

Bay Shore Blvd., Third St. to County Line (center island).
Guerrero St., 14th St. to Army St. (conduit and foundations).
Evans Avenue Bridge, at Army Street.
Geneva Avenue, Alemany Boulevard to Mission St. (conduit).
Clipper St. Extension, Douglass St. to Portola Drive (conduit).
St. Francis Circle.

Bay Shore Boulevard at Army Street.
Portola Dr., Teresita Blvd. to Twin Peaks Blvd. (center island).
St. Joseph's Ave., Turk St., to O'Farrell St., and O'Farrell St., Broderick St. to St. Joseph's Ave.
Powell Street, California Street to Broadway (conduit).
Miraloma Park, Omar Way-Myra Way and Bella Vista Way.
Third Street, Custer Avenue to Bay Shore Boulevard (conduit).
Seventh Street, Mission St. to Townsend St. (part of conduit and pull boxes).
Alemany Blvd., Mission St. to Station 36+00 (center island).
Industrial St., Bay Shore Blvd. to Oakdale Avenue.

During the year, private owners completed lighting of the Apparel City tract, consisting of 31 one-light 26-foot metal Taper Tube pendent electroliers.

Also during the year, real estate operators completed the development of several tracts, including the installation of a complete underground street lighting system, as follows:

Laurel Heights, consisting of 79 one-light 26-foot concrete pendent electroliers.
Anzavista Subdivision, with 55 one-light and 4 two-light 26-foot concrete pendent electroliers.
Miraloma Park (Myra Way-Bella Vista Way, Molimo Drive, Los Palmos Drive), consisting of 20 one-light 24-foot concrete electroliers.

This Bureau maintained strict inspection of the design and construction of the street lighting systems in these tracts during their installation.

After a high voltage test is applied to each of the lighting systems, they are deeded by the developers to the city for lighting and maintenance.

During the year the Park Commission began improvement of Yacht Harbor Extension, in which conduit and foundations for a future lighting system were installed under the supervision of this Bureau.

Engineering and inspection services were also furnished the Recreation Commission for the installation of a new floodlighting system at North Beach Playground, which consisted of installing the primary underground service, 107 floodlighting units on 23 steel poles, feeder cables and a new service switchboard.

The following contracts were entered into and are scheduled for completion during the ensuing year:

Cont. No.	Location
43	Geary St., Divisadero St. to Masonic Ave.
44	Geneva Ave., Mission St. to Alemany Blvd.
49	Third St., Twenty-third St. to Custer Avenue.
53	Third St., Custer Avenue to Bay Shore Boulevard.
55	Seventh St., Mission St. to Townsend St.
58	Tenth St., Market St. to Division St.
59	Civic Center and Hyde St., Market St. to California St.
60	Army St., Section 1, Harrison St. to South Van Ness Ave.
61	California St., Presidio Avenue to Maple St.

This Bureau is engineering the Fleishhacker Pool project for the Park Commission, which consists of installing primary underground service, a transformer bank and replacement of some secondary feeders.

NEW LIGHTS ON FELL STREET, EAST FROM COLE STREET.
A heavily traveled arterial leading into the Sunset District.

It is contemplated that contracts for the installation of the following street lighting systems will be let during the coming year. Plans and specifications for a number of these projects are now ready or are nearing completion.

Location	Nature of Work
O'Shaughnessy Blvd., Portola Dr. to Congo St.	New Lighting
Geneva Ave., Mission St. to County Line	New Lighting
Market St., Clayton St. to Corbett Ave.	Modernization
Portola Drive, Corbett Ave. to Evelyn Way	Modernization
Castro St., Market St. to 19th St.	New Lighting
Bryant St., Second St. to Tenth St.	Modernization
Harrison St., The Embarcadero to Tenth St.	Modernization
Fulton St., Divisadero St. to Masonic Ave.	New Lighting
Post St., Pierce St. to Presidio Ave.	New Lighting
Presidio Ave., Post St. to Geary St.	New Lighting
*Anza St., Masonic Ave. to Parker Ave.	New Lighting
*Army St., Section 2, South Van Ness Ave. to Guerrero St.	New Lighting
*Guerrero St. and San Jose Ave., Army St. to Randall St.	New Lighting
Sixth St., Market St. to Townsend St.	Modernization and Additions
Folsom St., The Embarcadero to Tenth St.	Modernization and Additions
Nineteenth Ave. Exten., Sloat Blvd. to Junipero Serra Blvd.	Modernization and Additions
Eighth St., Market St. to Division St.	Modernization and Additions
Irving St., Seventh Ave. to Ninth Ave.	New Lighting
Mission St., Silver Ave. to Onondaga Ave.	New Lighting
Sloat Blvd., Junipero Serra Blvd. to Great Highway	Modernization
*Alemany Blvd., Station 19+00 to Mission St.	Modernization
*Alemany Blvd., Mission St. to San Jose Ave.	Modernization
Mission St., The Embarcadero to Beale St.	New Lighting
Third St., Market St. to Mission St.	New Lighting
*Monterey Blvd., Ridgewood Ave. to San Anselmo Ave.	New Lighting
Second St., Howard St. to Harrison St.	New Lighting
*Junipero Serra Blvd., Sloat Blvd. to County Line	Modernization
Harrison St., Tenth St. to Fourteenth St.	New Lighting
Trumbull St., Mission St. to Davenport Lane	New Lighting
*Third St., Channel St. to Alameda St.	New Lighting
*Parker Ave., Turk St. to Anza St.	New Lighting
Bernal Ave., Dolores St. to Monterey Blvd.	Modernization
Bay Shore Blvd., Third St. to County Line	Modernization
Mission St., Beale St. to South Van Ness Ave.	Modernization

*Contingent upon new construction program of Department of Public Works.

During the coming year, the change of lighting equipment—which is now under way—will be completed on Market Street ("Path of Gold") and adjacent streets ("Triangle District"). This work consists of the replacement of existing magnetite arc lamps with incandescent high voltage series lamps.

This Bureau will conduct the engineering work and make plans and specifications, during the ensuing year, for the Park Commission for floodlighting Kezar Stadium.

Studies and engineering work will be continued for the installation of a complete new lighting system in Stockton Street tunnel. The old feeder system, which has been in service since the opening of the tunnel, now frequently develops short circuits that are very costly to repair.

Gas and Electric Supply:

During the fiscal year, 954,329,400 cubic feet of natural gas and 160,224,165 kilowatt hours of electricity were used for municipal purposes, exclusive of street lighting. For these utilities the city paid $256,567.31 to the Pacific Gas and Electric Company for gas, and $1,675,119.95 to the Hetch Hetchy for electric energy. These purchases were made through one steam, 442 gas and 806 electric accounts. Segregation and cost of the various accounts are shown in Tables VII and VIII.

The two accounts under rate schedule P-9 cover traction energy for the Municipal Railway, and the 46 D.C. and 31 A.C. meters involved are distributed in 13 substations. It is necessary to test these meters bi-monthly because of the large amount of energy used by the Railway. For the fiscal year and for traction energy only, the Railway used 105,405,091 kilowatt hours at a cost of $1,015,673.91. This represents a decrease of 11.3 per cent in energy use as compared to the prior year, which is brought about by the substitution of gasoline-driven buses for electric trolley cars on certain routes.

The overall use of electricity shows a decrease of 2.4 per cent as compared to the prior year. Substantial increases in electric energy usage are shown by the Airport, City Planning, Education, Retirement, Police, and Water Departments. However, large decreases in the Fire and Park Departments and Municipal Railway more than offset the increases, which results in a net decrease.

There are seven departments whose annual electric usages are over 1¼ million kilowatt hours.

The unit prices for gas and electricity have been analyzed by rate schedules in Tables VII and VIII. The average cost of electricity was 1.0455 cents per kilowatt hour and gas 3.3219 cents per hundred cubic feet.

During the year there occurred three increases in the price of fuel oil, resulting in a total increase of from $1.55 to $2.20 per barrel. Two electric rate schedules (P-9 and P-30), which cover three of the larger accounts, have fuel clauses which cause the energy rates to vary with the price of oil. This accounts largely for the average increase per kilowatt hour from 1.0001 cents to 1.0455 cents, or an increase of 4.5 per cent over the prior year.

The annual contract with the Pacific Gas and Electric Company provides for the purchase of all city gas requirements at the regular rate schedules, two classes of which (GH and GS) are affected by the same change in price of oil as affects the electric rate schedules. This Bureau found it advantageous to transfer all the remaining GH accounts to Schedule G, thus realizing a saving for the city. The G accounts, of which there are 436, are not affected by a change in the price of oil.

GUERRERO STREET, SOUTH FROM 21st STREET.
Old wire lighting

NEW LIGHTS ON GUERRERO STREET SOUTH FROM 21st STREET.
This arterial carries heavy traffic from downtown area to Mission and Glen Park districts.

A "stopper" clause in this schedule allows no increase in the effective rate for any block above the effective rate of the next preceding block.

The annual contract with the Pacific Gas and Electric Company also provides for the purchase of street lighting services other than energy. The Company still has a large investment in the street lighting system of the city and supplies all of the maintenance for equipment, whether company- or city-owned.

The option of paying 2 cents per kilowatt hour for power or 2¾ cents for lighting is still maintained and is exercised by the Bureau in favor of the departments as soon as it is apparent from our surveys of plant operating cost that a saving can be accomplished, thus eliminating the annual adjustment of accounts.

The judicious application of the technical features of the various gas and electric rates is one of the most important functions of this Bureau. In order that the proper rates may be applied, it is necessary to maintain a constant physical survey of plant operation and cost for each account. This often discloses reasons for changes to plant or plant operation that will result in a lower cost. The Bureau recommends such changes and offers the design and inspection services required.

The cost of gas and electricity used by the various departments is shown by functions and municipal government, as follows:

4 utilities	$2,283,111.52	80.8%
16 governmental departments	294,329.20	10.4%
7 social and recreational Departments	109,447.38	3.9%
1 schools	139,912.71	4.9%
	$2,826,800.81	100.0%

Thirty-six new gas and electric services were established during the year, and four were discontinued.

Inter-Departmental Work:

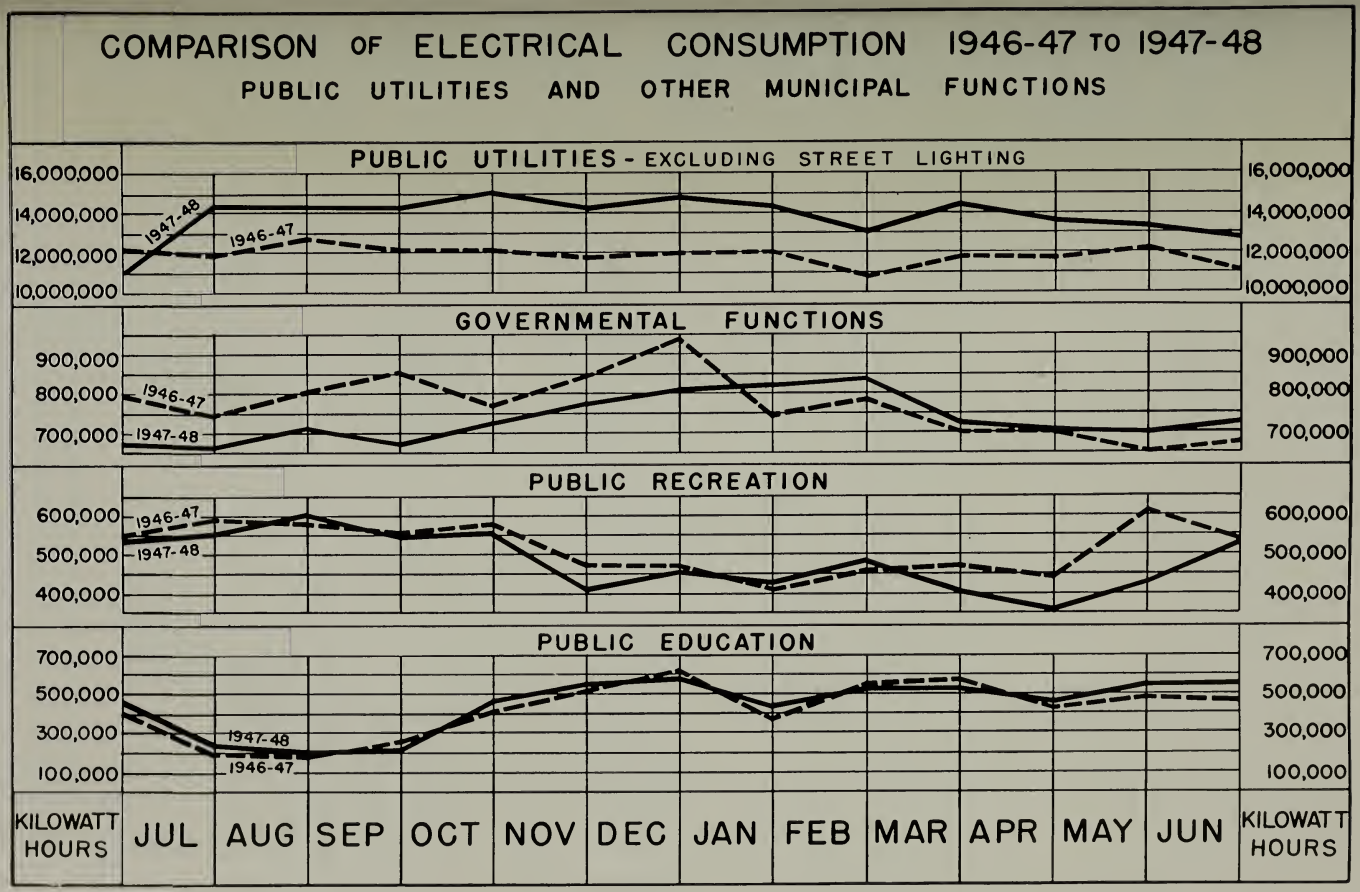
At the San Francisco Airport, 21 tenants purchased 9,575,043 kilowatt hours of electricity from the city-owned distribution system through 34 meters and 9 flat-connected accounts, at rates similar to those of the Pacific Gas and Electric Company for various types of services. A total of $100,850.67 was collected and credited to the Airport account. The cash profit on this resale amounted to $21,261.06.

Electric energy used to pump water through the jointly owned line to the Coast Guard Radio Station near Sharp Park was billed and credited monthly by this Bureau to the Park Commission or Sheriff. The credit for pumping is determined by noting which department actually does the pumping for the particular month in question.

The Police Department summary of electricity used includes a sizeable account labeled Miscellaneous Traffic Devices, which lists all of the unmetered traffic signals and devices within the City and County. It is the function of this Bureau to bill this account each month on a flat basis per unit of time per type of signal. The past year's increased installation of modern traffic signals on Third Street, and three other installations, added 74 units of the three-light type.

Inter-Departmental Engineering:

During the past fiscal year this Bureau furnished engineering services and advice (aside from street lighting) on matters relative to the use of gas and electricity. Typical examples are shown in the following list:


COMPARISON OF ELECTRICAL CONSUMPTION 1946-47 TO 1947-48
PUBLIC UTILITIES AND OTHER MUNICIPAL FUNCTIONS
PUBLIC UTILITIES - EXCLUDING STREET LIGHTING
16,000,000
14,000,000
12,000,000
10,000,000
1947-48
1946-47
GOVERNMENTAL FUNCTIONS
900,000
800,000
700,000
1946-47
1947-48
PUBLIC RECREATION
600,000
500,000
400,000
1946-47
1947-48
PUBLIC EDUCATION
700,000
500,000
300,000
100,000
1947-48
1946-47
KILOWATT HOURS
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
KILOWATT HOURS

Water Department:

Francisco pumping plant: Plans, specifications and tests for electric power and automatic control.

Irvington pumping plant: Inspection of construction and performance tests; writing of test report.

San Andres No. 3 chlorinating and pumping plant: Final tests; design and installation of additional automatic protective controls. Writing of electrical performance report.

Pumping plant, 36th Avenue and Clement Street: Inspection and tests of power and control system.

Millbrae Offices and Laboratories: Plans and specifications for light and power.

Park Commission:

Yacht Harbor: Revision and redesign of Yacht Harbor (outer and inner harbor) lighting and utilities system. Plans, specifications and inspection.

Fleishhacker Bath House: Revision of specifications and redesign of primary light and power system. Plans, specifications and inspection.

Central Water Works: Inspection and tests.

Kezar Stadium: Survey of existing electrical installation and preparation of drawings to show same.

Golden Gate Park Bandstand: Plans and specifications for light and power system.

Aquatic Park: Survey of public address system and submitting of recommendations.

Lake Merced pumping plant: Plans and specifications for power and controls.

South Windmill: Plans and specifications for motor drive of turret.

Conservatory: Plans and specifications for heating control system.

Mt. Davidson: Plans, specifications and inspection for primary electric service.

Recreation Commission:

Funston Playground: Inspection and final tests of floodlight system.

North Beach Playground: Inspection and final tests of floodlight system.

Folsom Playground: Plans and specifications for floodlight system.

Auditorium Offices: Plans and specifications for lighting, ventilation and communication system.

Bureau of Architecture:

Balboa High School: Plans and specifications for reconstruction of light and power system and modernization of lighting.

City College of San Francisco: Plans and specifications for light and power for classroom and laboratory.

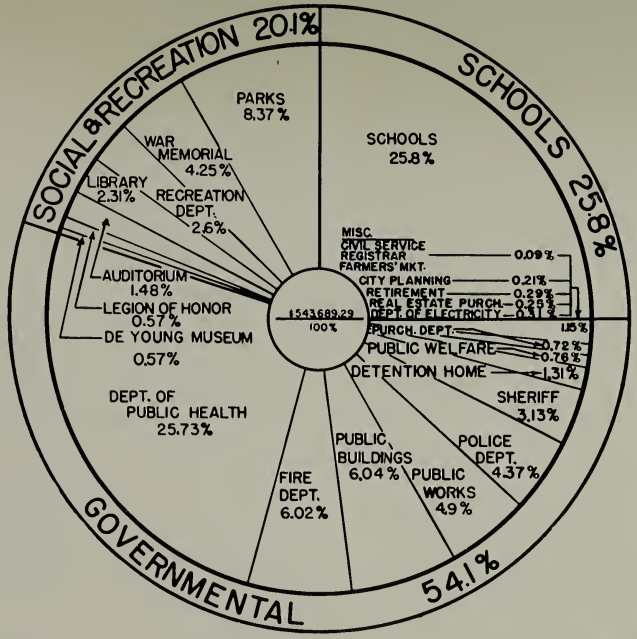
Court Rooms and Director-of-Personal-Property Rooms, 3d Floor, City Hall: Plans and specifications for lighting, heating and ventilation.

Roosevelt Jr. High School: Plans, specifications and inspection of lighting system.

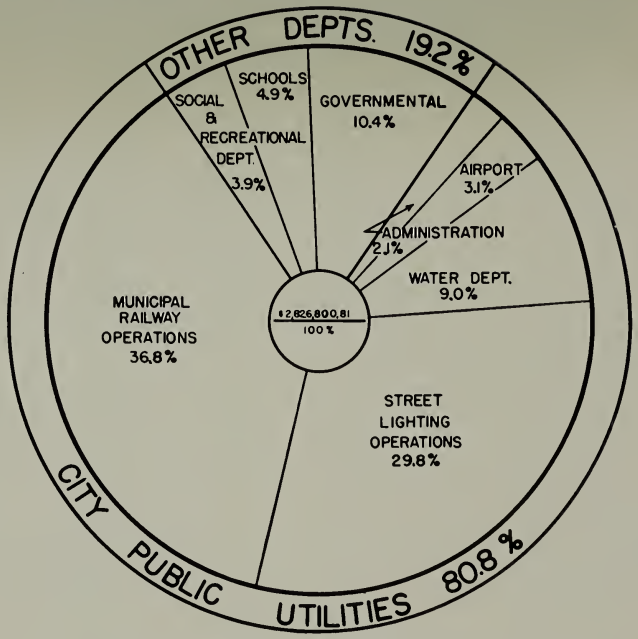
Main Library: Plans and specifications for lighting of three rooms.

Portable Classrooms: Plans and specifications for light and power systems.

DIVISION OF ANNUAL EXPENDITURES



GAS AND ELECTRICITY BY DEPARTMENTS OTHER THAN THE PUBLIC UTILITIES



GAS AND ELECTRICITY BY FUNCTIONS

Hospitality House: Installation of test lighting units.

Registrar's Machine Room: Plans and specifications for light and plug system.

Hall of Justice: Final inspection of feeder and switchboard installation.

Laguna Honda Home: Plans and specifications for additional load in wards.

Health Department: 33 Hunt Street—plans and specifications for lighting system.

San Francisco Hospital: Chest clinic—plans and specifications for lighting system.

Health Center Building: Plans and specifications for installation of new lighting fixtures.

Retirement Board, 460 McAllister St.: Plans and specifications for lighting and power system.

deYoung Museum:

Revision of plans and specifications for light and power system. Inspection of construction.

Municipal Railway:

Convenience stations: Plans and specifications for lighting system.

24th and Utah Streets bus garage: Input tests of gasoline pumping motors.

San Francisco Airport:

Simultaneous primary and secondary transformer voltage tests on United Air Lines distribution transformers in new shops.

Hetch Hetchy:

Plans and specifications for rewiring of Early Intake bunkhouse.

Fire Department:

Survey and report on electrical operation and costs at Fort Mason pumping plant.

The foregoing list of projects under inter-departmental engineering are those of a major nature. There are many ways in which this Bureau is occupied in serving any and all city and county departments which are not staffed and equipped to cope with the various problems regarding the general use of gas and electricity.

This Bureau's constant physical survey of all city properties—which is mandatory for our operation—is advantageous in rendering such services as operating cost surveys and reports; consultation and advice; special seasonal lighting problems; motor and other electrical equipment testing; trouble shooting on distribution systems; electric meter testing and the ever-present analyses of gas and electric rate schedules.

REVIEW OF STREET LIGHTING COST

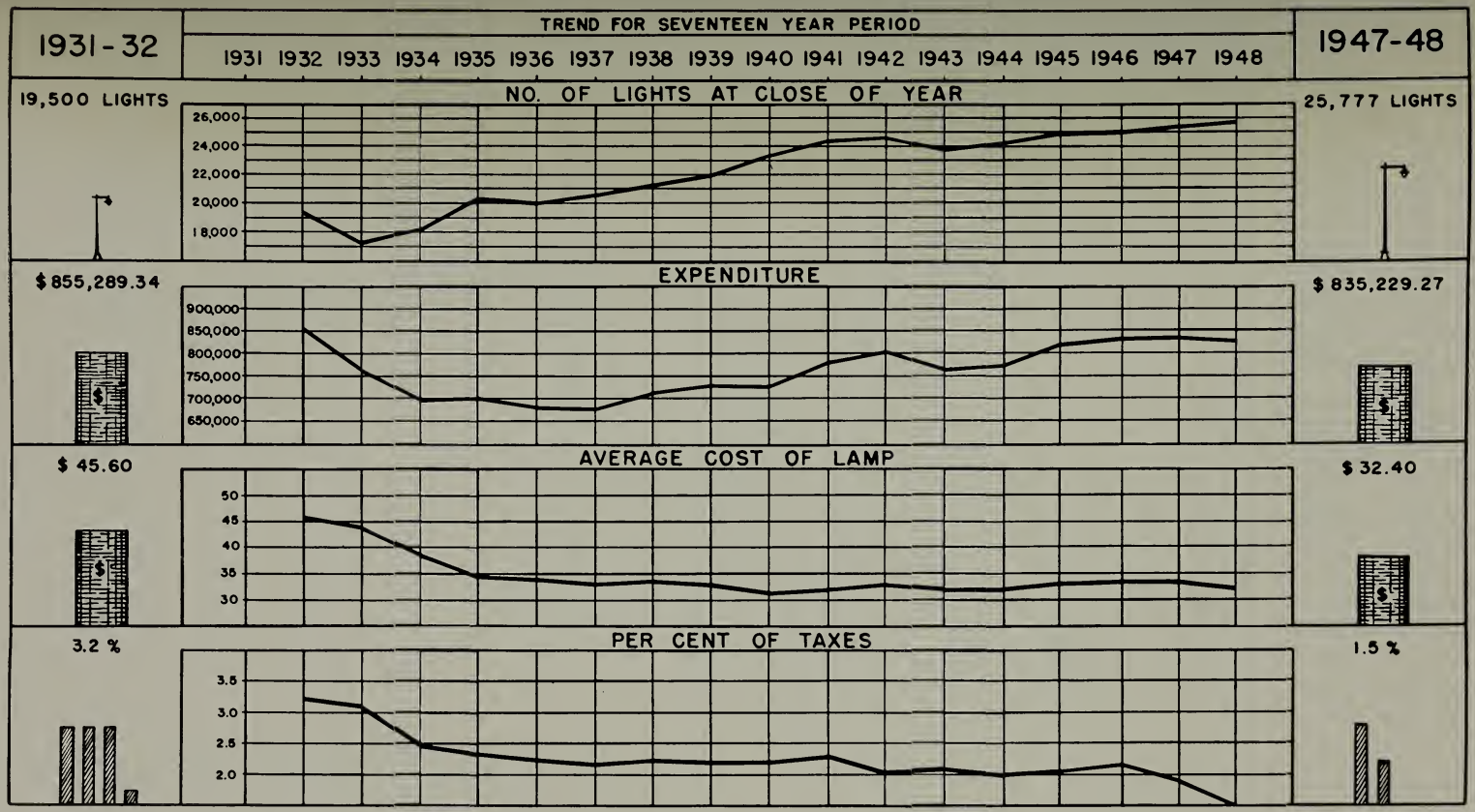


TABLE No. I
EXPENDITURES FOR LIGHT, HEAT & POWER FOR MUNICIPAL PURPOSES
1947-1948

GAS AND ELECTRIC SUPPLY:			
Electricity for Light and Power (excluding street lighting)	$1,675,119.95		
Gas for Heat and Power	254,503.26		
Steam for Heat	2,064.05	$1,931,687.26	
Adjustment		—4.90	
Total			$1,931,682.36
STREET LIGHTING OPERATION:			
Gross Contract Cost		$836,963.57	
Less: Outages		4,401.01	
Net Operating Cost		$832,562.56	
Maintenance, Replacements and Repairs	$5,142.67		
Less: Collections for Damages	5,109.30	$33.37	
Materials Purchased for Stock		$235.24	
Office Equipment		757.49	
Automotive Equipment		1,640.61	
Total			835,229.27
ENGINEERING, SUPERVISION AND OFFICE EXPENSE			59,889.18
Total Expenditures for Light, Heat and Power			$2,826,800.81

TABLE No. II
REVIEW OF STREET LIGHTING COST
1931-1948

Fiscal Year	No. of Lights at Close of Year	Expenditures	Per cent of Taxes	Avg. Cos per Lam per Yea
1931-32	19,500	$855,289.34	...	$45.60
1932-33	17,369	762,988.84	3.10	43.93
1933-34	18,115	696,126.56	2.48	38.43
1934-35	20,383	698,701.94	2.32	34.28
1935-36	20,060	677,128.37	2.24	33.76
1936-37	20,576	674,869.86	2.15	32.79
1937-38	21,378	711,737.60	2.21	33.29
1938-39	22,028	728,786.00	2.18	33.08
1939-40	23,376	727,167.60	2.18	31.10
1940-41	24,504	780,130.33	2.29	31.82
1941-42	24,604	801,189.98	2.03	32.56
1942-43	23,873	761,471.28	2.05	31.89
1943-44	24,153	771,384.97	1.99	31.93
1944-45	24,889	821,092.24	2.02	32.99
1945-46	25,040	833,525.06	2.38	33.29
1946-47	25,313	838,758.65	1.79	33.14
1947-48	25,777	835,229.27	1.50	32.40

TABLE No. III
NEW CITY-OWNED STREET LIGHTING CONSTRUCTION COMPLETED DURING 1947-48

Location	No. of Lights	Financed by	Value
Guerrero St., Market St., to Army St.	138	Bureau of Light, Heat and Power Department of Public Works	$30,019 17,779
Fell St., Baker St. to Stanyan St.	51	Bureau of Light, Heat and Power	28,493
Third Street, Alameda St. to Mariposa St.	34	Bureau of Light, Heat and Power	10,558
Union Square Garage	22	Bureau of Light, Heat and Power	10,176
Lyon, Baker and Bay Sts., Lombard St. to Marina Blvd.	27	Bureau of Light, Heat and Power	17,591
Clipper St. Extn., Douglass St. to Portola Dr.	19	Bureau of Light, Heat and Power Department of Public Works	12,182 1,680
Powell St., California St. to Broadway	21	Bureau of Light, Heat and Power Department of Public Works	10,845 1,543
Golden Gate Park Crossover and Bypass Dr.	25	Bureau of Light, Heat and Power	6,006
Bay Shore Blvd., 3rd St. to County Line	28	Department of Public Works	17,418
Evans Avenue Bridge, at Army St.	5	Department of Public Works	1,610
St. Francis Circle	8	Department of Public Works	3,572
St. Josephs Ave., Turk St. to O'Farrell St. O'Farrell St., Broderick St. to St. Josephs Ave.	8 4	Department of Public Works	6,957
Miraloma Park, Omar Way-Myra Way and Bella Vista	6	Department of Public Works	5,538
Alemany Blvd., Mission St. to Sta. 36+00	16	Department of Public Works	4,622
Industrial St., Bay Shore Blvd. to Oakdale Ave.	28	Department of Public Works	10,083
Apparel City Tract	31	Property Owners	17,410
Laurel Heights	79	Property Owners	43,679
Anzavista Subdivision	63	Property Owners	37,190
Miraloma Park, Myra Way-Bella Vista Way- Molimo Dr. and Los Palmos Dr.	20	Property Owners	14,292

TABLE No. IV
INVESTMENT IN CITY-OWNED STREET LIGHTING

	City Funds			Federal Funds		Property	Muny.	
	D.P.W.	P.U.C.	Park	W.P.A.*	P.W.A.	Owners	Ry.	Total
Prior to July 1, 1932	$223,185	.....	.....	.....	.....	$22,370	.....	$245,555
Fiscal Year 1932-33	37,288	.....	.....	.....	.....	.....	.....	37,288
1933-34	71,005	.....	.....	.....	.....	.....	.....	71,005
1934-35	18,618	$93,550	.....	.....	.....	6,652	.....	118,820
1935-36	9,540	15,110	.....	$11,745	$3,847	7,649	.....	47,891
1936-37	22,863	172,079	.....	67,463	17,411	33,049	.....	312,865
1937-38	15,069	69,805	.....	112,191	.....	14,444	.....	211,509
1938-39	13,721	6,458	.....	48,033	.....	25,353	.....	93,565
1939-40	7,072	9,957	.....	75,380	.....	14,339	.....	106,748
1940-41	10,910	5,380	.....	45,376	.....	40,827	.....	102,493
1941-42	2,445	1,980	.....	13,720	.....	32,800	.....	50,945
1942-43	8,345	3,969	.....	.....	.....	3,718	.....	16,032
1943-44	4,902	470	.....	.....	.....	371	.....	5,743
1944-45	.....	450	.....	.....	.....	5,738	.....	6,188
1945-46	.....	298	$1,166	.....	.....	350	.....	1,814
1946-47	.....	4,357	.....	.....	.....	.....	.....	4,357
1947-48	76,768	112,615	14,295	.....	.....	112,847	$1,110	317,635
Total, June 30, 1948	$521,731	$496,478	$15,461	$373,908	$21,258	$320,507	$1,110	$1,750,453
Less Portion Removed								5,273
Remaining Original Cost, June 30, 1948								$1,745,180
Accrued Depreciation, June 30, 1948								839,383
Depreciated Value as of June 30, 1948								$905,797
Reasonable Annual Depreciation Expense (Fiscal Year 1948-49)								$83,940
Average Rate of Depreciation								4.81%

*Includes City's Sponsorship Proportion.

TABLE No. V
STATEMENT OF CLAIMS BILLED AND COLLECTIONS MADE FOR DAMAGE TO CITY-OWNED STREET LIGHTING EQUIPMENT

July 1, 1947 to June 30, 1948

	Bureau of Light, Heat and Power	Bureau of Delinquent Revenue	Total
Accounts Receivable:			
July 1, 1947	$2,140.57	$3,086.66	$5,227.23
Claims filed during year	4,806.48	.....	4,806.48
Transfers	1,612.92	1,612.92	.....
Total	$5,334.13	$4,699.58	$10,033.71
Credits:			
Collections during year	$4,296.20	$813.10	$5,109.30
Accounts abandoned, uncollectible	.....	1,273.69	1,273.69
Total	$4,296.20	$2,086.79	$6,382.99
Accounts Receivable, June 30, 1948	$1,037.93	$2,612.79	$3,650.72

DEPARTMENTAL GAS AND ELECTRICITY
CONSUMPTION AND EXPENDITURES

CONSUMPTION					EXPENDITURES					
Electricity		Gas								
No. Accts.	KWH	No. Accts.	C/Cu. Ft.	Department	Electric	Gas	Total	Credits and Adjustments	Inter-Dept. Transfers	Totals
4	10,054,648	5	50,290	Airport	$82,771.30	$3,481.99	$86,253.29	.....	.....	$86,253.29
7	743,010	1	1,412	Auditorium	10,238.35	58.59	10,296.94	.....	—$2,282.73	8,014.21
9	2,575,288	..	.....	Building Lighting	30,531.71	.....	30,531.71	.....	+2,282.73	32,814.44
1	46,160	1	3,225	City Planning Commission	1,022.28	125.25	1,147.53	.....	.....	1,147.53
..	.....	2	5,152	Civil Service Commission	.....	200.97	200.97	.....	.....	200.97
4	152,996	..	.....	deYoung Museum	3,112.06	.....	3,112.06	.....	.....	3,112.06
274	5,389,781	159	932,844	Education	105,616.05	34,296.66	139,912.71	.....	.....	139,912.71
5	66,713	2	11,600	Electricity	1,245.99	433.48	1,679.47	.....	.....	1,679.47
1	74,981	1	594	Employees' Retirement System	1,562.78	28.67	1,591.45	.....	.....	1,591.45
2	1,301	..	.....	Farmer's Market	35.80	.....	35.80	.....	.....	35.80
65	733,505	99	374,438	Fire	18,489.95	14,232.38	32,722.33	.....	.....	32,722.33
1	412,080	3	280,267	Hassler Health Home	5,191.73	10,449.48	15,641.21	.....	.....	15,641.21
17	838,028	18	3,557,986	Health	14,860.05	109,686.49	124,546.54	.....	—301.80	124,244.74
1	3,564	..	.....	Hetch Hetchy Power Operating	158.27	.....	158.27	.....	.....	158.27
2	274	..	.....	Hetch Hetchy Water Supply	40.91	.....	40.91	.....	.....	40.91
3	159,950	1	6,404	Juvenile Court and Det. Home	2,640.98	238.49	2,879.47	.....	.....	2,879.47
..	.....	1	3,164	Laguna Honda Girl's School	.....	121.84	121.84	.....	.....	121.84
5	149,182	..	.....	Legion of Honor	3,113.98	.....	3,113.98	.....	.....	3,113.98
25	620,832	23	45,279	Libraries	10,742.83	1,799.64	12,542.47	.....	.....	12,542.47
6	116,275	..	.....	Log Cabin Ranch School	3,485.90	.....	3,485.90	.....	.....	3,485.90
36	106,835,782	15	141,407	Municipal Railway	1,033,674.15	5,198.04	1,038,872.19	.....	.....	1,038,872.19
1	12,856	1	8,052	Ocean View School for Girls	327.75	297.81	625.56	.....	.....	625.56
71	2,365,353	27	202,922	Park	38,320.70	7,147.95	45,468.65	.....	.....	45,468.65
61	1,023,186	13	54,451	Police	21,085.43	2,061.65	23,147.08	.....	+604.95	23,752.03
2	111,154	1	1,882,000	*Public Welfare	2,079.64	2,064.05	4,143.69	.....	.....	4,143.69
34	1,919,473	6	32,916	Public Works	25,477.31	1,230.54	26,707.85	.....	.....	26,707.85
13	150,269	5	17,273	Purchasing	3,246.71	659.33	3,906.04	.....	.....	3,906.04
14	16,295	5	24,070	Real Estate Purchases	433.15	904.62	1,337.77	.....	.....	1,337.77
63	387,327	29	29,039	Recreation	12,238.17	1,257.06	13,495.23	—$4.90	.....	13,490.33
4	20,576	3	2,228	Recreation-Teen Age Centers	513.32	102.20	615.52	.....	.....	615.52
2	8,470	2	906	Registrar	232.98	48.33	281.31	.....	.....	281.31
2	653,560	3	254,202	Sheriff	7,686.79	9,626.16	17,312.95	.....	—303.15	17,009.80
4	.....	..	.....	State Highways	8,178.85	.....	8,178.85	.....	.....	8,178.85
2	1,136,000	3	200,389	War Memorial	15,944.49	7,145.67	23,090.16	.....	—5,906.06	17,184.10
..	.....	..	.....	War Memorial Art Museum	.....	.....	.....	.....	+5,906.06	5,906.06
63	23,415,962	13	1,417,468	Water	210,232.91	43,542.65	253,775.56	.....	.....	253,775.56
2	29,334	1	3,316	Water Department Yard	586.68	127.32	714.00	.....	.....	714.00
806	160,224,165	443	9,543,294	Total	$1,675,119.95	$256,567.31	$1,931,687.26	—$4.90	.....	$1,931,682.36
										†895,118.45
										$2,826,800.81

*Public Welfare: 1,882,000 lbs. of Steam.
†Street Lighting Operations—Engineering, Supervision and Office Expense.

TABLE No. VII
PURCHASE OF ELECTRICITY BY SCHEDULES
Lighting and Miscellaneous Use

Schedule	No. Accts.	KWH	Cost	Cost per KWH Cents
$.0275	228	534,837	$14,619.35	2.733
C-1	47	15,867,001	197,174.60	1.242
C-6	9	11,555,176	96,682.64	.836
D-1	5	25,452	385.74	1.515
D-5	2	4,638	109.68	2.364
D-6	6	48,794	794.18	1.627
DA-6	2	34,169	563.47	1.649
L-1	232	4,139,099	97,481.42	2.355
L-5	3	50,781	1,438.25	2.832
L-6	18	170,621	5,535.26	3.244
L-21	1	244	14.72	6.032
L-31	1	594	40.80	6.868
L-34	4	197,012	2,352.79	1.194
L-35	2	6,496	229.69	3.535
Total	560	32,634,914	$417,422.59	1.279

For Power

$.02	196	1,495,676	$29,921.22	2.000
H-1	6	167,734	2,264.09	1.349
P-1	9	209,197	3,515.04	1.680
P-2	1	30	26.19	87.300
P-3-13	8	1,262,668	17,170.97	1.359
P-5	1	1,876,800	17,561.25	.938
P-7	1	200,786	3,677.96	1.831
P-9	2	105,405,091	1,015,673.91	.963
P-15	11	2,008,208	28,345.92	1.411
P-17	1	191,480	3,442.98	1.798
P-30	1	14,275,200	113,097.54	.792
Total	237	127,092,870	$1,234,697.07	.97
Contract	6	496,381	$19,807.27	3.99
Schedule 1	1	.....	60.78	..
Schedule 10	1	.....	90.78	..
Schedule 16	1	.....	3,041.46	..
Total	9	496,381	$23,000.29	4.63
Grand Total	806	160,224,165	$1,675,119.95	1.04

TABLE No. VIII
PURCHASE OF GAS BY SCHEDULES

For General Use

Schedule	No. Accts.	Cubic Feet	Cost	Cents per 100 cu. ft.
G-1	418	210,310,400	$78,272.72	3.7218
G-3	6	1,981,100	802.16	4.0491
G-6	12	36,246,900	13,946.35	3.8476
Total	436	248,538,400	$93,021.23	3.7427

For General Heating

GH-1, GH-2 — Transferred to G-1 and G-3 Schedules

For General Heat and Power

Contract	1	.....	$1,344.00	....
GS-1	4	494,867,000	151,556.49	3.0626
GS-2	1	22,724,000	8,576.64	3.7743
Total	6	517,591,000	$161,477.13	3.1198
Gas Totals	442	766,129,400	$254,498.36	3.3219
Steam S-1	1	1,882,000 lbs.	$2,064.05	10.9673 cwt.
Grand Total	443	.....	$256,562.41	....

TABLE No. IX
STREET LIGHTING OPERATION BY MONTHS—1947-48

Kilowatt Hours, Maintenance and Fixed Charges

	KWH	Cost	Maintenance and Fixed Charges	Total Cost
July	1,970,736	$26,225.27	$44,911.97	$71,137.24
August	2,208,571	29,424.22	41,613.29	71,037.51
September	2,420,977	32,290.65	37,049.81	69,340.52
October	2,790,720	37,254.27	34,124.90	71,379.17
November	2,961,237	39,557.29	29,527.72	69,085.01
December	3,193,751	42,675.13	28,812.33	71,487.46
January	3,075,140	41,079.81	30,361.17	71,440.98
February	2,564,252	34,227.29	29,255.83	63,483.12
March	2,474,837	33,005.62	34,513.82	67,519.44
April	2,105,556	28,072.05	37,122.83	65,194.88
May	2,085,838	27,772.87	43,969.17	71,742.04
June	1,865,772	24,822.99	44,892.20	69,715.19
Total	29,717,387	$396,407.46	$436,155.10	$832,562.56

TABLE No. X
NUMBER AND TYPE OF STREET LIGHTS IN USE
June 30, 1948

	Jointly Owned	City Owned	Company Owned
Series Incandescent:			
Underground connected:			
10,000 lumens	123	532	63
6,000 lumens	698	2,068	530
4,000 lumens	693	938	2,851
2,500 lumens	416	468	366
1,000 lumens	243	....	....
1,000 watts	...	8	....
500 watts	4	....	....
300 watts	143	8	278
200 watts	...	56	14
150 watts	...	10	....
100 watts	...	6	11
60 watts	...	156	....
50 watts	...	4	....
Overhead connected:			
10,000 lumens	...	....	17
6,000 lumens	...	....	372
4,000 lumens	...	....	13,237
2,500 lumens	...	....	374
300 watts	...	....	17
200 watts	...	....	11
Special:			
10,000 lumen sodium vapor	...	19*	....
15,000 lumen magnetite arcs	...	....	1,027
20,000 lumen mercury vapor	...	16	....
Total	2,320	4,289	19,168
	9%	16.63%	74.37%

Grand Total—1947, 25,313; 1948, 25,777—464 new lights.

*Maintenance by work order.

PLAIN IN THE BAY

About twelve million cubic yards of earth was dumped into the bay and packed down to form the white area shown in this picture. This is the complete ground area of San Francisco International Airport.

SAN FRANCISCO AIRPORT DEPARTMENT

B. M. DOOLIN

Manager and Chief Engineer

B. M. DOOLIN
Manager and Chief Engineer

Construction of the greater San Francisco International Airport under the 1945 Bond Issue has proceeded as programmed during the past fiscal year, but, as in all other types of activity, the inflationary trend was being felt. Since 1945 construction costs have increased an average of 46 per cent.

Additional requirements of the Civil Aeronautics Administration, which exercises control over airport standards, have made mandatory some costly changes in airport design. Three years ago the runway required to qualify San Francisco Airport as a Class 5 airport, then the highest possible classification, was 5,700 by 150 feet, capable of supporting 30 tons per wheel. To attain today's highest classification requires an 8,900 by 200 feet runway built to sustain 42½ tons per wheel. Therefore, it now requires a 108 per cent increase in runway area and a 42 per cent increase in runway strength to stay in the top grade of airports.

Coupled with this, an unprecedented increase in operations during the first two years of construction required immediate and often emergency expenditures to meet accelerated demands of new business. Development of new devices to increase reliability of operations during periods of low visibility has also added to the cost of equipment and facilities necessary to provide a modern air terminal.

These new aids to reliable air transportation include high intensity approach lighting, ILS (Instrument Landing System), GCA (Ground Controlled Approach by means of Radar Equipment), and FIDO (disperses fog over a runway with heat developed by oil burners located adjacent to the runway's perimeter).

In order to complete the San Francisco International Airport as planned and provide the people of San Francisco and the Bay Area with a fully modern air terminal, it is obvious that an additional bond issue must be approved by the electorate of San Francisco if we are to build "an airport to match our seaport."

Summary of Activities:

The number of scheduled air carrier flights increased 32 per cent over the number of such flights a year ago. In June, 1947, an average of 191 scheduled air carrier flights operated each day. By June, 1948, the average had increased to 202 per day, or an arrival or departure every 7 minutes of the day and night.

The Airport's number of revenue air carrier passengers in and out showed an increase by climbing from 980,000 in 1946-1947 to 1,044,501 in 1947-1948—an increase of 6 per cent and the first time past the million mark.

In air mail poundage the Airport had a gain of 12 per cent to a year's total of 12,199,645 pounds. Air express jumped 75 per cent for the year to a total of 9,952,733 pounds. Air freight, a new activity, on which figures are available for the last six months of the fiscal year, amounted to 5,123,439 pounds.

International Activities:

San Francisco's Airport has now taken on global significance and may rightly be termed international in scope.

The past twelve months has brought foreign air carriers such as British Commonwealth Pacific Airlines, China National Aviation Corporation, and Philippine Air Lines to make use of the Airport's facilities. Their selection of the San Francisco International Airport as a base or terminal stop on their global or intercontinental routes is the result of the progressive attitude of the San Francisco citizenry toward aviation as evidenced by passage of the 1945 bond issue.

Airport Construction:

Description of airport construction can be found in Hetch Hetchy section of this report.

China National Aviation Corporation:

China National Aviation Corporation, better known as "CNAC" the "Pioneer Airline of the Orient," commenced its trans-Pacific route with the expansion of International routes on October 7, 1947, and has been flying passengers, cargo, and mail between the American terminus of San Francisco and the China terminus of Shanghai.

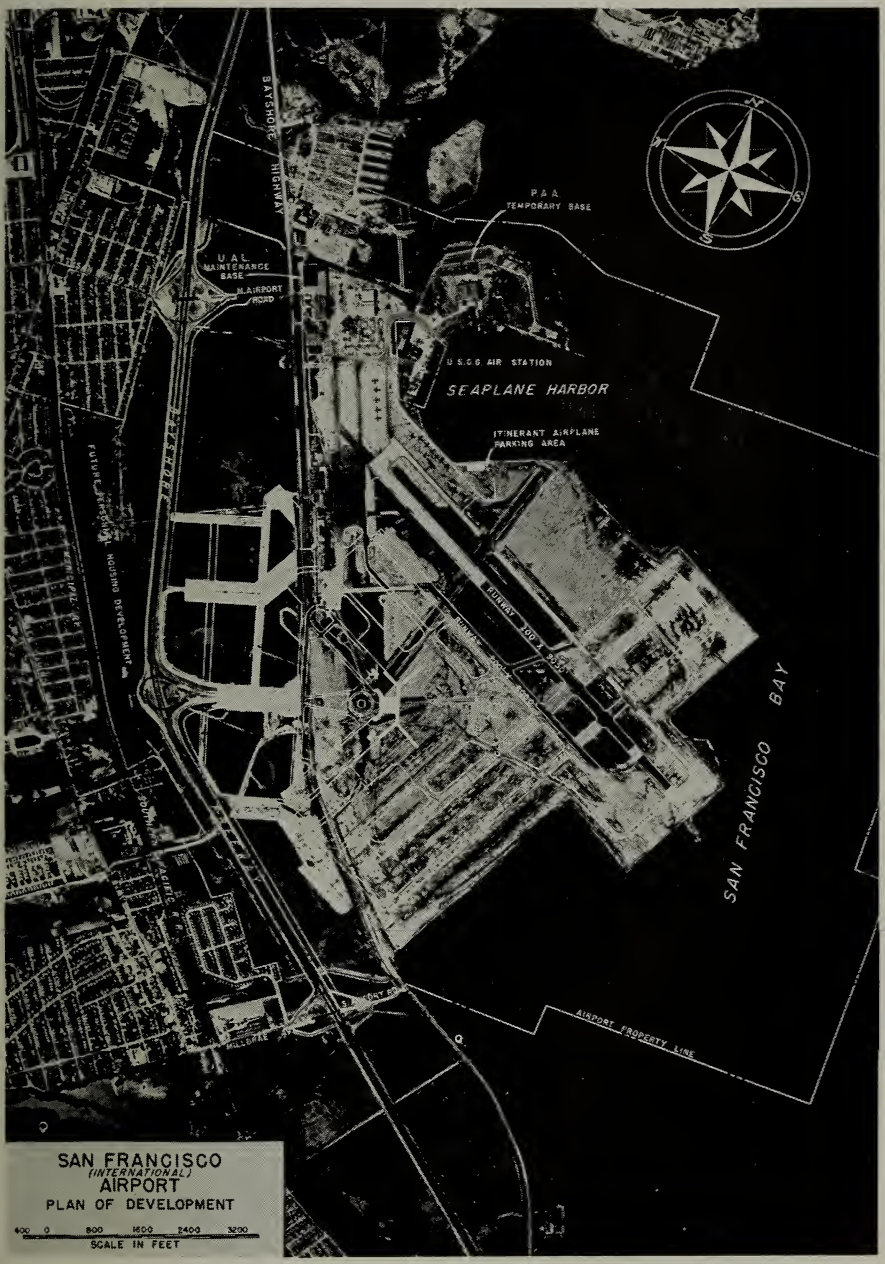
CNAC's C-54 type aircraft are equipped with sleepers. The aircraft are manned by a crew of 10—2 pilots, 2 navigators, 2 flight engineers, 2 radio operators, and 2 stewardesses.

Philippine Air Lines, Inc.:

Philippine Air Lines moved its United States operations base to the San Francisco Airport in June, 1948. The PAL route runs from San Francisco to Manila, Hong Kong, Athens, Rome, Madrid, and London, and utilizes DC-6 Pacemakers which feature exclusive full-size beds for sleeping.

The airline's schedule from San Francisco provides passengers with a service that makes Manila just one night's flying from San Francisco. A morning takeoff from San Francisco Airport puts the passenger in Honolulu for dinner, in Guam for breakfast, and in Manila for lunch.

Philippine Air Lines' operating flight crews are all men with outstanding Pacific war-time flying records with the military air transport services. The passenger service flight crews (pursers and stewardesses) provide trans-Pacific air travelers with the natural warmth of personality associated with their native Philippines.



FILL JOB DONE

Most of the fill work in the present expansion program is completed. It appears in white, as contrasted to the old field when the job started in May, 1946.

British Commonwealth Pacific Airlines Ltd.:

With the inauguration in 1946 of the BCPA service (in which Australia is partner with New Zealand and Great Britain) Australia increased significantly its standing as a major air nation. For many years it has been the terminal of service from Britain and Europe; now it is tied with the United States and Canada across the Pacific, and thence across the Atlantic with the Old World. Instead of being a terminal, it has become a key point on a chain of airlines encircling the globe.

"All **Red" Routes**: The idea of an "All Red" air route to link Canada, New Zealand, and Australia was prominent in discussions at the air conference of countries of the British Commonwealth at Montreal in 1944. Agreement on details was achieved at the British Commonwealth Civil Aviation Conference at Wellington, New Zealand, in February and March of 1946. To conduct the service, the three governments agreed to the formation of British Commonwealth Pacific Airlines Limited.

Australia took over 50 per cent of the shares; New Zealand, 30 per cent; and the United Kingdom, 20 per cent. The three directors chosen were Mr. Arthur W. Coles for Australia, Sir Leonard Isitt for New Zealand, and Lord Knollys for Britain. An alternate director, Sir Keith Smith, of Australia, has since been added. Sir Harold Hartley has succeeded Lord Knollys. Under the leadership of these men, the great task of organizing a new airline of world standing has gone ahead steadily despite the difficulties of the first post-war years.

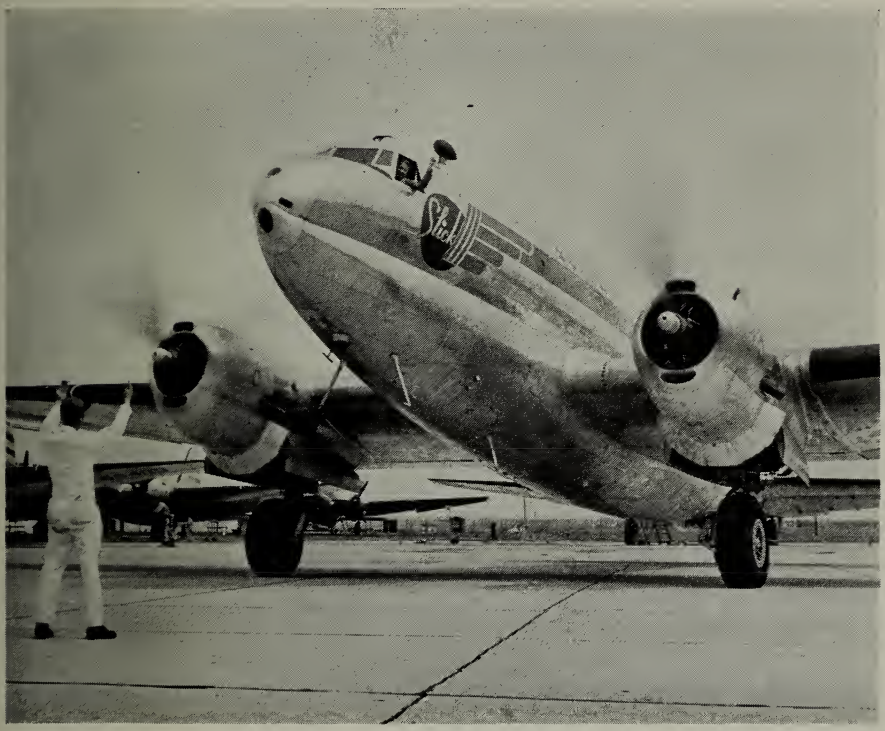
The first question was how to get planes. The directors found that it would take so long to obtain delivery of new aircraft that inauguration of BCPA services would be delayed for at least a year. The solution was to get an existing airline to operate the route under charter and a suitable company was found in Australian National Airways. ANA began the BCPA service with Douglas Skymasters in September, 1946, and continued under charter until April 21, 1948, when BCPA took over its own running, having acquired a fleet of four Skymasters.

As well as meeting the problem of aircraft, BCPA had to carry out negotiations with the United States on reciprocal rights in the Pacific. While these talks were in progress, certain temporary air carrier permits and operations specifications were arranged. On this temporary basis, BCPA began a fortnightly service between Sydney and Vancouver (by way of Fiji, Canton Island, Honolulu, and San Francisco) on September 15, 1946, without the right to pick up or set down passengers in Honolulu or San Francisco.

Bilateral Pact: Not long afterward, on December 4, 1946, a bilateral agreement between New Zealand and Australia on the one hand, and the United States on the other, was signed. It took some months to get final papers issued, and it was not until mid-February in 1947, that this air transport agreement between the three countries came into full effect, giving BCPA traffic rights on American territory, instead of only transit rights.

On February 21, 1947, the BCPA Sydney-Vancouver service was lifted to once a week, and since then (on July 23, 1947) has become three times a fortnight. The BCPA service between New Zealand and Canada (also by way of Fiji, Canton Island, Honolulu, and San Francisco) was inaugurated on April 25, 1947, in the fornightly basis that it has since retained.

Slumber Seats Installed: Standard equipment on all BCPA Skymasters are modern, adjustable slumber seats. These can be used as comfortable lounge and observation seats during daylight flying, and at the touch of a button, they be-



FREIGHT CARRIER
Slick Airways operates large air freight business out of San Francisco Airport.

come fully reclining sleeping couches. This feature, plus BCPA planned schedules which allow full day stops at Honolulu and Fiji, means that most of the flying over the ocean is done in comfort at night.

BCPA, like any airline worth the name, has plans for the future which make present achievements look like the coach and buggy era; it is looking to the time when there will be a BCPA plane in and out each day of the year—that will be some time ahead. A more immediate objective is to become an increasingly big dollar earner for Australia, and when the dollar crisis is over, to win a big tourist traffic across the Pacific—Americans anxious to see the "land down-under" and Australians eager to see the wonders of the Americas.

BCPA has great hopes for development of the San Francisco-Vancouver part of its service. It covers this 792-mile hop in four hours at a reasonable fare, with a low freight rate of 24 cents a pound. It believes that this fact—cheap service—will attract an increasing number of Canadians and American tourists and business passengers, and a good express load.

Trans World Airline:

Trans World Airline (Transcontinental & Western Air, Inc.) during the year continued to increase its service into San Francisco.

Additional flights were added, bringing to four the number of Constellation flights scheduled from the city for the east coast. Important cities, now less than half a day or night from San Francisco, include New York, Philadelphia, Pittsburgh, Chicago, Cincinnati, St. Louis, and Kansas City, as well as Los Angeles. It is interesting to note the progress TWA has made since it started operations into San Francisco on September 5, 1937. At that time it was flying only DC-3 airplanes which required 21 hours and 45 minutes to make the flight from New York to the Golden Gate. It is now possible to leave New York on a Constellation at 9:00 o'clock in the morning and arrive at San Francisco Airport at 6:40 p.m., California Daylight time. Ten years ago to arrive here at 6:40 p.m. a passenger had to board his plane in New York at midnight. At that time TWA had only 3 flights a day from San Francisco. These schedules have quadrupled in a decade.

San Francisco International Airport serves as the extreme western terminus of TWA's 30,000-mile domestic and international airline covering 25 states and 15 foreign countries. TWA has direct one-carrier service via Constellations and other modern Skyliners from San Francisco to the major cities of the United States as well as to Ireland, France, Switzerland, Italy, Spain, Portugal, Greece, North Africa, Egypt, Saudi Arabia, and India. The airline is also certificated to operate into Palestine and China.

Western Air Lines, Inc.:

Western Air Lines most significant news in 1948 was the introduction of Convair 49er service through San Francisco, giving this key city in WAL's Coastal division the fastest city-to-city commercial air schedules in the history of San Francisco Airport.

During the year Western celebrated the first anniversary of the extension of its Coastal division from San Francisco, the former northern terminus, to Seattle-Tacoma with a way stop at Portland. Passengers were carried on this route in 300-m.p.h. Convair 49ers and DC-4 Skymasters.

WAL planes hauled 506,906 pounds of air mail into, and 471,881 pounds of air mail out of San Francisco Airport during the year. Western passengers numbered 106,380 inbound. A total of 442,706 air freight pounds was brought in on WAL planes and the outbound figure was 713,528 pounds.

Thousands of passengers yearly take advantage of Western Air Lines' connecting service at San Francisco Airport with overseas flights of Philippine Air Lines and Pan American Airways.

Incorporating the latest developments in post-war aviation, the Convair 49er has a top speed of 336 m.p.h and cruises at 300. Some of its more advanced features include a self-contained passenger loading stairway which lets down from beneath the tail, reversible pitch propellers which enable the plane to be backed up on the ground and which can be reversed in landing runs as an additional air brake, and jet exhaust boosters on each engine which give the aircraft an added 12 m.p.h. thrust.

The Convair was named the 49er in honor of California's Centennial celebration next year and appropriate christening ceremonies were held at San Francisco Airport on the plane's initial run. By Convair 49er, San Francisco is one and a half hours from Los Angeles, three hours and twenty minutes from Seattle, and two and a half hours from Portland. However, during the first week the Convair was in operation, Western Air Lines claimed a new commercial airline record between Portland and San Francisco when the 558-mile flight was made in two hours and five minutes.

Southwest Airways Company:

Southwest Airways, one of the nation's leading certificated feeder lines, serves 25 California cities in addition to Medford, Oregon, from its hub of operations at San Francisco International Airport. Future developments in this new type of air carrier activity may require more ground space than is presently required by national and international carriers at the Airport.

San Francisco, being the hub of Southwest's Air Mail Route 76 system, boarded each month a considerably higher number of passengers than other cities on SWA routes. A total of 21,859 passengers left here for points north and south during the 12 months from July, 1947, to June, 1948. The all-time high month was August with 2,926. Air mail, air freight, and air express traffic also far surpassed all expectations. SWA revenue from San Francisco passengers totaled $203,765 during the fiscal year; August was highest revenue month with $25,893.

In July, 1947, ten flights left San Francisco and ten arrived daily; June of 1948 boasted the all-time high total of 14 incoming and 14 outgoing schedules daily. During the period Southwest experimented with new shuttle flights—terminating short of the system's extremities of Los Angeles and Medford—so as to place equipment where the greatest traffic potential warranted.

Southwest's equipment includes 11 DC-3 aircraft and one C-47 cargo or training ship. All maintenance, flight control, etc., now is handled at San Francisco.

Originally only the company's operations department and nothern district offices were maintained at San Francisco; now the carrier has assembled its entire organization, with exception of station personnel, at San Francisco. In December, 1947, the overhaul, engine repair and maintenance departments were moved from Phoenix, Arizona. Eighteen families were involved in the move. With the establishment of general offices and executive headquarters here, 22 additional families came from Westwood, California, in January and February of 1948.

Southwest's total staff at San Francisco numbered 70 in July, 1947. It rose to 210 by February, 1948, and in June of this year 235 people were employed by SWA.

In April, 1947, Southwest made known its intention to apply to the Civil Aeronautics Board for certification to 69 additional cities in the state and to such points as Boise, Idaho; Reno, Nevada; and Phoenix, Arizona. The new routes would cover an additional 3,264 miles. Southwest points out that the additions would insure San Francisco Airport the position of being the hub of a short-haul network second to none in the world.

United Air Lines, Inc.:

"United Air Lines is going to go as San Francisco goes," said United's president, W. A. Patterson, during a recent quarterly inspection of the company's huge San Francisco base last September. That statement sums up United's attitude toward San Francisco, the pivot point on its coast-to-coast, Pacific Coast and San Francisco-Honolulu airway.

On his tour, Mr. Patterson inspected what has been described as the largest aircraft maintenance base in the world. Built by United to centralize and speed maintenance and overhaul of the company's giant four and two-engined planes, the modern, streamlined steel and cement constructed base covers 116 acres. Its various buildings contain 700,000 square feet of space.

"PUSHBUTTON" MAINTENANCE BASE

LABORATORY CLEAN SHOPS

The United Airlines maintenance base operations are smooth, efficient and fast. Motors, for one example, are taken apart down to the last bolt and put together again on assembly line.

Manning the base are nearly 2,000 technicians and mechanics who can completely overhaul and virtually rebuild a ship in four days, utilizing suspended metal catwalks, engine baths and mass production techniques; 11 Mainliners can be worked on at the same time.

Originally, the base handled only the company's 39 DC-6's and 30 DC-4's, but United is now in the process of moving the facilities of its Cheyenne Maintenance Base to San Francisco. By early 1949, all maintenance of the company's 78 twin-engined DC-3's will be handled there.

In other words, all of United's Mainliners which daily are flying nearly 200,000 miles and serving 80 cities on its 10,700-mile system will be flown to San Francisco regularly for overhauls and maintenance.

During the 22 years of its history, United has flown more than 10,000,000 passengers over 5,000,000,000 miles. This year United will fly an estimated 13,500,000 passenger miles out of the San Francisco area alone. The company operates almost 100 daily flights in and out of San Francisco.

During the last year, United has given San Francisco Mainliner 300 (DC-6) service to every major city on its system, including the first DC-6 flights to Portland and Seattle; the first such flights to Salt Lake City, Milwaukee, Cleveland, Hartford-Springfield, and Boston. Other Mainliner 300's provide five-mile-a-minute service to Denver, Chicago, New York, Philadelphia, Washington, Los Angeles, and Honolulu.

Mainliner 230's (DC-4's) and Mainliner 180's (DC-3's) provide San Francisco with frequent inter-city air service up and down the Pacific Coast and to intermediate cities all along United's system.

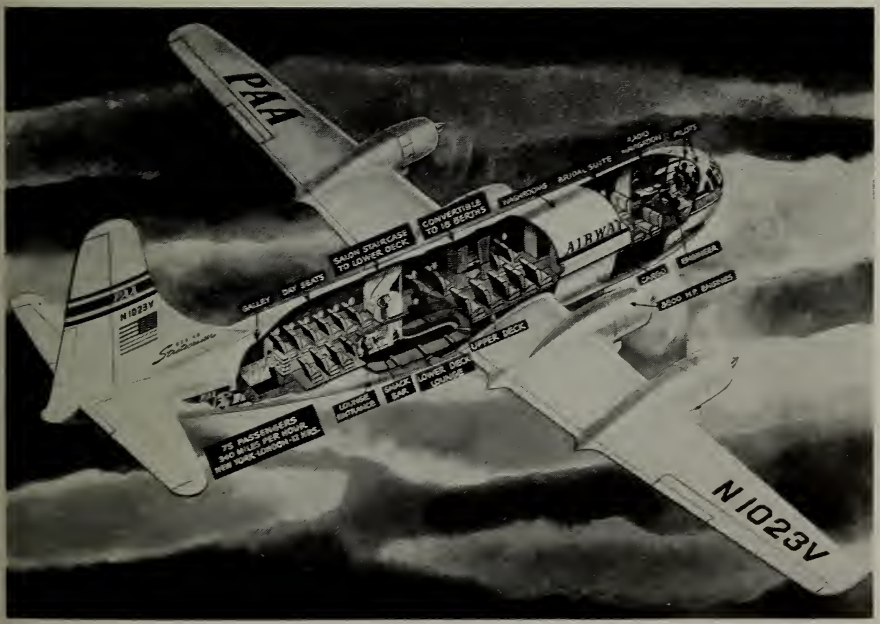
The giant 50-passenger Mainliner 300's have made San Francisco the air hub of United's vast airway. Situated in almost the exact geographical center of the system, San Francisco is within 14 hours of Boston and 9½ hours of Honolulu—the two extreme ends of the company's system. Typical elapsed times from San Francisco to major cities, in hours and minutes: Los Angeles, 1:45; Portland, 2:25; Seattle, 3:00; Denver, 4:00; Chicago, 6:50; Cleveland, 9:55; New York, 10:30; Philadelphia, 11:15; and Washington, D. C., 11:35.

In 1949, United will take delivery of seven Boeing Stratocruisers it now has on order. These huge planes, to be operated between San Francisco and Honolulu, will be "the last word" in luxury and passenger comfort. The 87-ton sky giants will have two decks. On the lower level will be a lounge. United will limit the seating capacity to 55 on the Stratocruisers to provide a maximum of move-about room for each passenger.

During the last year, United has done much to increase the efficiency of its operation, improving reliability of its schedules. In addition to opening the maintenance base, United has made many innovations, including the installation of a speed reservations system which makes it possible to confirm all passenger reservations promptly, streamlining of the ground service organization at key stations, and a centralized nation-wide operations control system to coordinate all weather information coast-to-coast radio, telephone and teletype communications.

New VHF (Very High Frequency) ground receivers are being installed at key points along United's system. The new receivers, replacing war surplus sets, will pick up messages from aircraft 175 miles away. The sets are expected to make additional contributions to speed, safety, and over-all efficiency through their ability to receive landing requests, weather and route information more clearly and over greater distances than ever before.

STRATOCRUISER
Pan American will be first to use the swank, double-deck Boeing Stratocruiser.
These ships will serve trans-Pacific runs from San Francisco Airport.



STRATOCRUISER STORY
Luxurious Boeing Stratocruiser will be used by airlines out of San Francisco Airport soon.

Pan American World Airways System, Pacific-Alaska Division:

During the fiscal year ending June 30, 1948, Pan American World Airways' Pacific-Alaska Division, with headquarters at San Francisco, streamlined flight schedules to provide faster and more frequent service between San Francisco and the major cities of the Orient, Australia, and New Zealand.

San Francisco-Shanghai service was increased from two to three direct flights weekly, and San Francisco-Hong Kong flights from three to five weekly. Direct flights were established for the first time between Manila and Shanghai via Hong Kong without lay-overs or plane changes.

Fares are Lowered: During the same period Pan American kept up a consistent effort to lower passenger rates over its routes from the mainland to the Far East, and between points in the Orient. The company established new low rates from San Francisco to Hawaii of $150 one-way and $270 for the round trip. Other fares were consistently lower than pre-war rates for the same flights. Excursion rates with reductions up to 30 per cent were set up between Pacific points such as Guam and Shanghai.

Travel Increased: Passenger traffic showed more than a beginning of a post-war pickup. Traffic on Clipper flights from the United States to Australia in the first six months of this year increased 221 per cent over the same period in 1947. Passenger loads from San Francisco to the Orient were running about twice the figure of the previous year. Nearly 50 per cent of all passengers between San Francisco and Honolulu were being carried by Pan American. And of these, at least half were traveling for pleasure.

Pleasure travel elsewhere in the Pacific also began to pick up once government restrictions on touring to such spots as the Philippines, China and Australia were lifted.

Bigger, Faster Planes: At present, the company is preparing for the introduction of a newer, bigger and faster type of plane in its Pacific services, the Boeing Stratocruiser-type Clipper, with a 70-passenger capacity and a cruising speed that will cut the flight time to Hawaii by three hours.

This new Clipper America, first of a PAA fleet of 20, is the result of five years of development work by the Boeing Airplane Company. It provides spaciousness —the ultimate in airline luxury. Its double deck frees passengers from the necessity of staying close to their seats during flight. A lounge occupies part of the space on the lower deck. Four Pratt & Whitney Wasp Major engines, developing a total of 14,000 horsepower, give the Clipper a cruising speed of 340 m.p.h. Its pressurized cabin allows it to operate at 25,000 feet. Maximum range is 4,200 miles with a payload of 12½ tons. It is 110 feet 4 inches long, 38 feet 3 inches high at the tail, and its wingspan is 141 feet 3 inches.

Preparation for the use of the new planes embraces all sections of Pan American's integrated organization—maintenance and operations, the sales and traffic departments, publicity and advertising. **(Pan American advertises its Pacific flights and the multitude of schedules with San Francisco as the base point in more than 50 newspapers throughout the Pacific area.)**

Facts and Figures: The Pan American base at the San Francisco Airport had a total of 2,178 employees (not counting flight personnel and crews stationed overseas), with a total annual payroll in the San Francisco area of $8,474,000.

During the fiscal year from July 1, 1947, to June 30, 1948, Pan American carried a total of 19,099 passengers out of San Francisco, and brought in 18,745 for a

RESCUE SHIP
This Coast Guard B-17 can drop the boat slung under its belly to crash victims at sea.

grand total of 37,844 passengers. This is an increase of 10,221 over the previous fiscal year.

Five hundred ninety-eight thousand three hundred forty-five pounds of mail was carried out and 452,128 pounds was carried into San Francisco during the fiscal year, making a total of 1,050,473 pounds of mail handled by Pan American, or an increase of 198,908 over the previous year.

Express carried into San Francisco amounted to 180,857 pounds, while 617,450 pounds was carried out for grand total of 798,307 pounds, up 199,412 pounds over last year's total.

The company has played a large role in making San Francisco the present-day port of the Pacific and Orient. **It is also a terminal for round-the-world flights either starting here, or ending here, after originating in New York.**

Pan American now has applications on file with the Civil Aeronautics Board for domestic routes within the United States, among them a main route connecting San Francisco and New York, as well as San Francisco and Seattle and Los Angeles.

If the petition is granted, the San Francisco Airport will become an even more important international terminal than previously.

United States Coast Guard:

The United States Coast Guard Air Station is the focal point of Air Search and Rescue operations for this area. It utilizes both land and sea plane facilities of the San Francisco Airport. Its area of responsibility extends from the Oregon-California boundary to Santa Maria, California, and halfway to the Hawaiian Islands.

Long range coverage is accomplished with specially equipped Flying Fortresses carrying droppable lifeboats and with Martin Mariners. Grumman Amphibians are used normally for local operations.

A rigorous training program is pursued constantly to provide all possible assistance in the event of occasional disaster which must be anticipated with the ever increasing trans-Pacific commercial flying.

In addition to strictly rescue activities, the station is charged with assistance in carrying out many other duties required of the Coast Guard by law—transporting medical cases from ship to shore, locating disabled and overdue craft, checking aids to navigation, etc.

Close liaison is maintained with commercial interests operating trans-Pacific runs in order to have exchange of ideas, discussion of problems, and to keep the commercial companies advised of latest developments in techniques which would be of value to them.

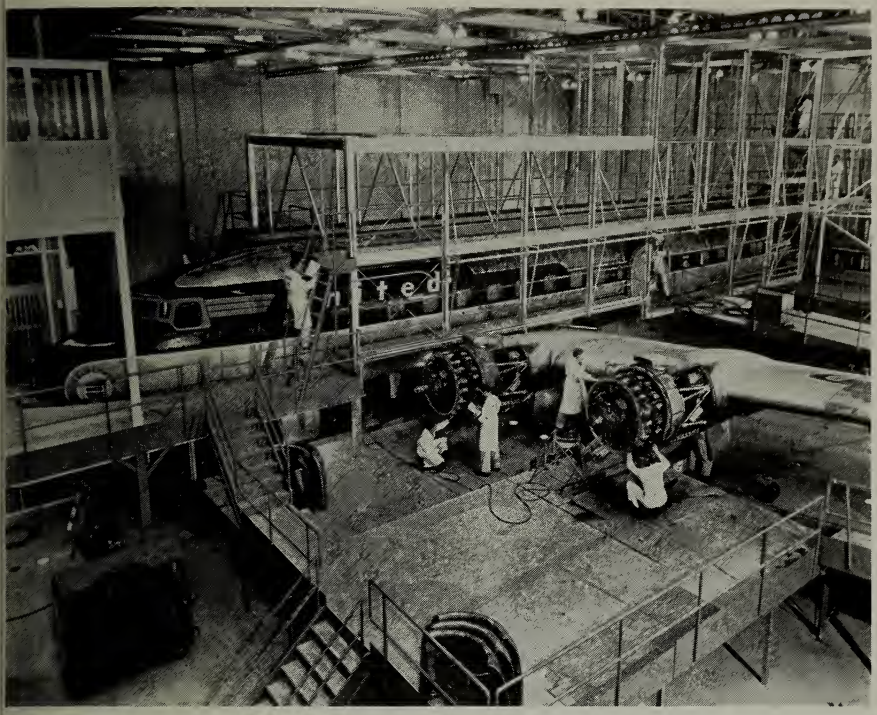
Airport Traffic Control Tower:

The Control Tower at the San Francisco International Airport is operated 24 hours a day by personnel of the Civil Aeronautics Administration. A crew of 14 controllers has the responsibility of maintaining the safe, orderly, and expeditious flow of all air traffic converging upon the Airport from overseas and from all the main domestic air terminals of the country.

During clear weather the Tower assists pilots by giving directions via radiotelephone concerning: direction of takeoff and landing; which runway to use; and other information such as landing sequence numbers, necessary when several aircraft desire to land at the same time.

In 1947 additional air traffic control duties were designated to the San Francisco Tower; these duties were concerning "Approach Control" which is a system whereby tower personnel perform all the duties of clear weather control, plus maintaining separation between arriving and departing aircraft during a condition of inclement weather. When such weather conditions exist, aircraft approaching the airport from all parts of the country are placed in what is termed a "holding stack." This stack is in the immediate vicinity of the airport and is a tentative "parking place" in the air for aircraft that must wait their turn to land. For example: 10 airline aircraft approach for landing at approximately the same time. The first aircraft to arrive is cleared into the airport. The other aircraft must await successive turns until each preceding aircraft effects its landing. These "holding aircraft" fly a prescribed flight pattern using an aeronautical radio fix, an element of time, and an altitude separation of 1,000 feet between each aircraft to execute such a holding stack.

It is the Tower's responsibility to provide such separation as well as to advise the pilot of each holding aircraft when to leave each altitude, and what time to start his approach to land at the airport.



QUICK OVERHAUL
In new "Pushbutton" maintenance base, United DC-6 is overhauled in record time.

All this traffic movement is carried on by the use of radio-telephone equipment which ranges from low frequency to the new VHF (very high frequency) equipment.

Due to the various types and differences in cruising and landing speeds of present day aircraft, a continuous surveillance—both visual and audible—is maintained to provide the prime function of the San Francisco Airport Control Tower. That function is SAFETY OF OPERATION. It is a fascinating assignment for all tower personnel, one of maintaining an orderly and expeditious flow of air traffic with safety and service to the flying public as the keynote.

The annual payroll of the present Control Tower staff amounts to approximately $54,000.

Overseas Foreign Aeronautical Communications Station:

The Overseas Foreign Aeronautical Communications Station at the San Francisco Airport, under the jurisdiction of the Civil Aeronautics Administration, is charged with furnishing aids to air navigation to aircraft in overseas flight. This station covers the area between the Pacific Coast and Hawaii, maintaining constant radio communication with all aircraft within the area. The monthly average of over-water flights which are furnished communications by this station is upward of 1,075. The station also collects meterological information from the entire

Pacific area, including Asia, accomplishing distribution to the continental U. S. by means of various land-line teletype circuits terminating at the airport.

The Airway Communications Station has a corresponding function for all aircraft in flight over land within the station area.

All facilities are maintained for the benefit of the general public, the itinerant pilot receiving the same services as do the scheduled airlines. Th present staff of the Communications Station, under the direction of E. C. Butler, Chief Communicator, includes 68 employees with an annual average payroll of $280,000.

United States Weather Bureau Airport Station and Forecast Center:

The nation-wide meterological service of the Weather Bureau provides reports and advices of value to almost every kind of business and profession and probably ranks close to the postal service in universal interest and application. An act of Congress dated October 1, 1880, created the Weather Bureau and made it responsible for the general weather service of the nation. Subsequent legislation and executive decisions extended the Weather Bureau's responsibilities in the science of weather and climate until its services now apply to all modern fields of endeavor as well as to general agriculture, commercial, industrial, and transportation interests. Of special importance to aviation interests are the Air Commerce Act of 1926 and the Civil Aeronautics Act of 1938, which specifically delegated to the Weather Bureau the responsibility of furnishing adequate meteorological service for air navigation in order to promote the safety and efficiency of air commerce.

In accordance with its responsibilities, the Weather Bureau has established at the San Francisco Airport a major weather reporting station and forecast center. Its facilities, in no small measure, have contributed in developing and maintaining the San Francisco Airport as one of the chief air terminals in the United States. It is the largest Weather Bureau station west of Chicago. Some of its various units and their functions are as follows:

The Observation Section: This Section maintains a constant 24-hour watch of the existing weather conditions at the San Francisco Airport, taking two or more observations every hour and utilizing modern meteorological instruments and equipment, including an electronic device for automatically and continuously measuring and recording the heights of clouds. These reports are not only disseminated to the various airlines operating on this field, but are also transmitted through CAA teletype facilities to all points on the national weather network. This unit also maintains weather records for statistical and climatological purposes.

Domestic Airway Forecast Unit: The Forecast Unit prepares aviation weather forecasts every 6 hours covering the area embracing northern and central California and Nevada, including trip forecasts along the various airways and terminal forecasts for many cities within the district. These forecasts are given national distribution over the CAA teletype facilities. This unit also furnishes weather information to commercial and itinerant pilots through personal contact and maintains close liaison with the operational and dispatch personnel of the domestic airlines at the San Francisco Airport.

Flight Advisory Weather Service: Working in close cooperation with the Air Traffic Control Section of the CAA, the Flight Advisory Weather Service keeps pilots in flight posted on the latest weather development and expected changes.

HAWAII BOUND
A United DC-6 heads out over Golden Gate for Hawaii at 300 miles per hour.

International Aviation Forecast Service: This unit is the main center for weather map analysis and flight forecasts over the northern Pacific Ocean. For use in airlines operation, it prepares flight folders containing charts and maps of existing and expected weather conditions over trans-oceanic routes between San Francisco Airport and various overseas ports.

District Forecast Unit: Every six hours this section prepares general weather forecasts covering all sections of northern and central California and Nevada. Public dissemination of these forecasts is accomplished by means of newspapers, radio stations, wire press services, and by CAA teletype facilities on the national weather network. In addition, this unit issues storm warnings and advisories covering the immediate Pacific coastal areas for marine commerce and the fishing industry; frost warnings for agricultural interests; and rain warnings for the benefit of fruit-drying areas of California.

Fire-Weather Unit: The Fire-Weather Unit functions during the drier (summer) months of the year, keeping close watch on the meteorological conditions favorable for creating fire hazards to our forest areas of northern California and western Nevada. During this period daily forecasts and bulletins are issued to the U. S. Forest Service and to cooperating agencies, and forecasts are dispatched to aid in the control of fires raging in our forest areas.

American Airlines, Inc.:

Early in the fiscal year, a transcontinental air carrier new to the Bay Area was added to those already serving this region, with inauguration on July 7, 1947, by American Airlines of daily flights into and out of San Francisco Airport.

American's Flagships, long familiar in the East and the South, offered San Franciscans for the first time direct, one-carrier service to several Arizona and Texas cities in the Southwest, as well as day-time transcontinental flights over its Southern Sun Country route, by way of Tulsa, Oklahoma, and Washington, D. C., to New York.

Since that time, American Airlines has added a daily overnight, coast-to-coast flight to its San Francisco schedules; has inaugurated the first direct, one-carrier service from the Bay Area to Mexico City; has added Oklahoma City, Philadelphia, and several more Arizona and Texas communities to the cities served directly from this region, and has established a crew base here.

The number of persons employed by the company locally has grown from 30 to 84.

Slick Airways, Inc.:

Slick Airways was founded by Earl F. Slick, a former administrative officer and pilot in the ATC. For equipment, C-46E Curtis Commandos, proven as a transport carrier, insulated with 3 and a ply fibreglas and built-in air conditioning units, were converted to commercial use in Slick's own shops. Slick Airways require two pilots with an Airline Transport rating in each plane.

San Francisco, Los Angeles, Denver, Chicago, Detroit, New York, Philadelphia, Dallas, and San Antonio each have sales and traffic offices. The largest single classification of commodities flown by Slick is department store merchandise, perishables, machinery, household goods, and miscellaneous merchandise follow in that order. Approximately 30 per cent of the freight volume originates in the San Francisco-Los Angeles area.

Some of Slick Airways' achievements are: carrying more freight than any other airline; first airfreight line with its own complete maintenance and overhaul system; first to apply for certification as a freight airline to serve the nation on flexible area-to-area basis; first to develop and equip entire fleet with cargo cabin air-cooling system to protect perishables; and first all-freight line to have its own nation-wide leased teletype wire.

The San Francisco Sales, Traffic, and Operations office, under the direction of Mr. F. J. Wilkinson, San Francisco District Manager, has 26 employees plus flight personnel based at this station.

Airport Personnel:

As of June 30, 1948, the personnel roster of the San Francisco Airport was as follows:

Manager and Chief Engineer of Airport Department, B. M. Doolin
Superintendent of Airport Operations, H. S. Messersmith
Assistant Superintendent of Airport Operations, R. E. Smith
Engineer (Construction), A. J. Wehner
Maintenance Chief, M. B. Sweet
Accountant, H. J. Pachtner

Supervisor of Airport Services, J. Zunino
Crew Chiefs
Airport Attendants
Bookkeepers
Clerk Stenographers
Telephone Operators
Clerk Typists
Working Foreman Janitor
Janitors
Janitresses

SAN FRANCISCO AIRPORT MONTHLY TRAFFIC REPORT

AIRCRAFT MOVEMENTS

Month	Air Carrier		Itinerant		Local		Total	
	1946-47	1947-48	1946-47	1947-48	1946-47	1947-48	1946-47	1947-48
July	4,851	6,043	2,484	4,044	3,169	4,542	10,510	14,629
August	4,885	6,716	2,246	4,143	2,608	4,681	9,739	15,540
September	4,898	6,410	2,079	3,487	2,669	3,932	9,646	13,829
October	4,716	6,517	2,624	2,712	4,030	3,910	11,370	13,139
November	4,083	5,803	2,098	1,887	3,528	2,616	9,709	10,306
December	4,393	6,834	2,252	1,805	4,038	2,879	10,683	11,518
January	4,052	6,526	1,971	1,983	4,610	2,532	10,633	11,041
February	3,884	5,646	1,719	1,986	5,220	2,420	10,823	10,052
March	4,796	5,992	2,746	1,581	6,819	3,654	14,361	11,227
April	4,994	6,110	3,375	1,661	7,459	2,902	15,828	10,673
May	5,814	6,552	3,269	2,213	6,121	3,272	15,204	12,037
June	5,722	6,272	3,472	1,738	5,074	2,527	14,268	10,537
Total	57,094	75,421	30,335	29,240	55,345	39,867	142,774	144,528

SCHEDULED AIR CARRIER OPERATIONS
AIR MAIL, AIR EXPRESS, AND AIR FREIGHT
SAN FRANCISCO AIRPORT

Month	Pounds of Air Mail		Pounds of Air Express		Pounds of Air Freight
	1946-1947	1947-1948	1946-1947	1947-1948	1947-1948
July	792,563	937,223	332,910	672,436	.....
August	736,761	902,083	381,714	784,108	.....
September	644,960	842,221	425,913	740,857	.....
October	782,341	914,407	515,452	893,297	.....
November	793,586	937,112	520,440	725,662	.....
December	1,210,424	1,441,719	593,901	831,602	.....
January	929,083	988,018	416,094	934,551	487,563
February	906,089	975,988	410,209	942,322	579,184
March	1,004,362	1,140,951	545,372	1,036,395	778,308
April	1,021,041	1,054,567	548,892	855,423	648,081
May	1,086,050	1,046,256	542,669	1,037,139	832,978
June	1,026,055	1,019,100	464,602	498,981	1,797,325
Total	10,933,315	12,199,645	5,698,168	9,952,733	5,123,439

SCHEDULED AIR CARRIER OPERATIONS
REVENUE PASSENGER ACTIVITIES SAN FRANCISCO AIRPORT

Month	Revenue Passengers In and Out		Revenue Passengers On and Off	
	1946-1947	1947-1948	1946-1947	1947-1948
July	99,216	98,244	84,980	88,844
August	102,130	115,918	90,481	100,676
September	95,524	102,700	84,896	93,367
October	88,390	96,139	79,036	85,295
November	72,200	76,073	64,994	67,013
December	70,183	77,121	62,719	65,017
January	58,140	65,462	53,270	55,332
February	56,473	68,621	51,311	53,878
March	74,859	75,696	67,821	63,377
April	79,585	80,137	71,630	68,463
May	91,132	90,188	80,022	77,989
June	93,000	98,202	81,042	87,346
Total	980,832	1,044,501	872,202	906,597

SAN FRANCISCO AIRPORT

EXHIBIT A

CONSOLIDATED BALANCE SHEET—JUNE 30, 1948

ASSETS

Fixed Capital:		
In Service	$16,957,044.42	
Less Reserve for Depreciation	2,767,050.29	
	$14,189,994.13	
Under Construction	11,075.32	
Total Fixed Capital		$14,201,069.45
Cash:		
Operating Fund	$184,732.08	
Reconstruction and Replacement	54,547.30	
1938 Bond Fund	5,022.88	
1945 Bond Interest Fund	6,586.11	
Revolving Fund	2,500.00	
Cash in Transit	1,811.98	
Total Cash		255,200.35
Accounts Receivable:		
Miscellaneous Debtors	$80,861.94	
Bureau of Delinquent Revenue	146.40	
Total Accounts Receivable	$81,008.34	
Less Reserve for Bad Debts	5,814.40	
Net Accounts Receivable		75,193.94
Interfund Accounts:		
Taxes Receivable—Prior Years	$14,234.87	
Less Reserve	10,671.34	
Net Interfund Receivables		3,563.53
Deferred Charges:		
Material and Supplies	$5,100.16	
Postage Stamps	552.40	
Prepaid Insurance	2,103.16	
Damage Claims (Contra)	1,894.00	
Outstanding Encumbrances (Contra)	18,181.10	
Work in Progress	1,540.33	
Total Deferred Charges		29,371.15
Total Assets and Deferred Charges		$14,564,398.42

LIABILITIES

Bonded Debt:		
1938 Airport Bonds Due January 1, 1940 to January 1, 1949	$2,850,000.00	
Less Bonds Matured	2,565,000.00	
Bonds Outstanding		$285,000.00
Bond Interest Payable:		
1938 Bond Interest Matured	$2,427.50	
1945 Bond Interest Accrued, Not Due	19,843.75	
1945 Bond Interest Matured	2,675.00	
Total Bond Interest Payable		24,946.25
Accounts Payable:		
Warrants Outstanding	$23,790.94	
General Creditors	7,233.97	
Window Washing Commitment	471.00	
Payroll Deductions	36.66	
Outstanding Encumbrances (Contra)	18,181.10	
Total Accounts Payable		49,713.67
Interfund Accounts:		
Due to Public Service Enterprises	$28,463.03	
Due to General City and County	19,385.76	
Total Interfund Payables		47,848.79
Deferred Credits:		
Telegraph Agency Cash Receipts	$3,898.27	
Petroleum Agency Cash Receipts	78.31	
Locker Agency Cash Receipts	71.65	
Reserve for Damage Claims (Contra)	1,894.00	
Rentals Paid in Advance	47,523.88	
Rentals Billed in Advance	86.67	
Suspense Credits	1,596.96	
Guarantee Deposits	350.00	
Total Deferred Credits		55,499.74
Surplus:		
Detail Schedule Attached (Exhibit C)		14,101,389.97
Total Liabilities and Surplus		$14,564,398.42

SAN FRANCISCO AIRPORT
EXHIBIT B
COMPARATIVE STATEMENT OF REVENUES AND EXPENSES

Twelve Months Ended June 30, 1948

		June 30, 1948	June 30, 1947
	OPERATING REVENUES:		
	Air Carrier Flight Operations:		
6701-A	Scheduled Air Carriers	$97,513.47	$76,654.40
6701-B	Certified Scheduled Feeder Air Carriers	4,387.37	1,384.95
6701-C	Non-Scheduled Air Carriers	16,757.42	12,200.52
	Total Flight Operations	$118,658.26	$90,239.87
	RENTALS:		
6702-A	Public Address System	$8,211.23	$20.00
6703-A	Aircraft Outdoor Storage	11,643.09	9,295.26
6703-B	Airport Property Unimproved	14,914.78	6,425.13
6703-C	Airport Property Paved Area	17,113.11	16,028.59
6703-D	Hangar, Hangar Office, and Hangar Shop, Entire Hangar as a Unit	17,901.41	8,561.87
6703-E	Partial Hangar, Hangar Office and Hangar Shop	1,509.17	3,568.39
6703-F	Passenger Terminal Building Office Space	9,504.85	6,476.23
6703-G	Passenger Terminal Building Other Than Office Space	37,589.05	32,083.91
6703-H	Other Buildings, Structures and Improvements	11,497.99	8,839.34
6703-I	Tank Farm Area	7,250.24	2,944.44
6704-A	Bulk Petroleum Deliveries to Tank Farm Area	3,127.69	1,938.11
6704-B	Pipe Line Licenses	300.00	250.00
	Total Rentals	$140,562.61	$96,431.33
	COMMISSIONS ON PERMITS OUTSIDE PASSENGER TERMINAL BUILDING:		
6705A	Taxi Cabs and Limousines	$30,864.22	$28,575.33
	COMMISSION ON AGENCIES:		
6706-A	Telegraph	$16,703.68	$18,122.44
6706-B	Petroleum Products	48,167.16	47,848.33
6706-C	Lockers	872.19	787.44
	Total Commissions	$65,743.03	$66,758.21
	Total Operating Revenues	$355,828.12	$282,004.31

OPERATING EXPENSES:	June 30, 1948	June 30, 1947
Salaries and Wages:		
Administrative	$10,000.08	$10,000.08
Maintenance	5,256.00	4,968.00
Operative	216,210.37	139,851.83
Total Salaries	$231,466.45	$154,819.91

	OPERATING COSTS:		
71	Travel Expense and Local Fares	$12,007.69	$8,071.56
72	Freight, Express and Drayage	222.82	87.88
73	Use of Employees' Cars—Mileage Only	1,557.57	1,015.00
75	Storage and Care of Vehicles	77.35	13.60
78	Maintenance and Care of Office Equipment (Operating)	1,392.07	109.33
79	Maintenance and Repairs—Other Equipment (Operating)	87.90	.....
71	Gas and Electricity	9,766.49	6,255.25
72	Telephone and Telegraph	6,293.40	4,349.30
73	Postage	168.95	478.47
74	Printing, Advertising, etc.	991.49	976.97
75	Subscriptions to Newspapers and Periodicals	533.45	430.48
78	Contractual, Janitorial and Window Washing Services	981.00	780.00
79	Professional and Special Services	9,064.43	2,520.74
78	Miscellaneous Contractual Services	2,150.93	633.64
70	Operating Material and Supplies	8,307.43	6,269.20
71	Warehouse Expense—Clearing	.02	.....
	Total Operating Costs	$53,602.99	$31,991.42

	MAINTENANCE COSTS:		
0	Maintenance of Landing Area	$4,091.26	$5,683.58
1	Maintenance of Runways	2,578.34	3,491.88
2	Maintenance of Field Lighting Equipment	3,427.08	1,531.83
3	Maintenance of Radio Equipment	720.46	308.00
4	Maintenance of Hangars	743.78	1,448.87
5	Maintenance of Administration Building	2,875.48	1,568.01
6	Maintenance of Other Buildings	10,856.96	628.39
7	Maintenance of Automotive Equipment	1,118.49	2,516.01
71-2	Automotive Transportation—Miscellaneous	3,489.99	1,385.65

				June 30, 1948		June 30, 1
8228	Maintenance of Other Equipment—Shop, Field, etc.....			4,016.77		41
8229	Maintenance of Parking Areas, Roads, Walks, Fences, etc...			4,787.37		3,59
8230	Maintenance of Power Distribution System.....			4,580.06		5,03
	Total Maintenance Costs.....			$43,286.04		$27,61
	FIXED CHARGES:					
9801	Accident Compensation—Employees			$262.81		$4
9813	Automobile Insurance			809.75		55
9815	Other Insurance			5,551.05		4,59
9860	Pensions and Retirement Allowance.....			20,301.56		5,15
9870	Taxes			34,788.56		30,05
9925	Depreciation	$435,027.67				434,98
9926	Less Depreciation Expense Adjustment.....	125.25		434,902.42		
9930	Bad Accounts			4,800.00		1,05
	Total Fixed Charges.....			$501,416.15		$476,43
	Total Operating Expenses.....			$829,771.63		$690,86
	Operating Loss			$473,943.51		$408,85
	OTHER INCOME:					
6707-R	Income from Re-Sale of Electric Energy.....	$100,919.53			$74,607.84	
6707-X	Less Cost of Electric Energy Sold.....	76,577.81			55,884.19	
		$24,341.72			$18,723.65	
6708-A	Rental of Land for Purposes Not Associated with Aviation	2,397.20			2,789.76	
6708-B	Reimbursement of Taxes Paid—Pan American Airways.....	4,781.09			2,218.81	
6708-C	Reimbursement of Telephone Extension Charges	1,093.65			410.55	
6708-D	Cash Discounts	75.60			31.22	
6708-E	Miscellaneous	1,437.53			179.01	
6708-F	Reimbursement of Natural Gas Charges.....	612.88			3,231.11	
6709	Non Cash Revenues.....	4,602.45				
9941	Miscellaneous Additions and Deductions to Income	52.92	39,395.04			27,5
			$434,548.47			$381,2
	OTHER EXPENSES:					
9830	Airport Bond Interest Expense.....	$29,822.37			$13,328.19	
9830	Less Amortization of Bond Premium.....	518.69	29,303.68		139.63	13,1
	Net Loss for Twelve Months.....		$463,852.15			$394,4

SAN FRANCISCO AIRPORT
EXHIBIT C
CONSOLIDATED SURPLUS ACCOUNT

For Twelve Months Period Ended June 30, 1948

ance, due June 30, 1947, After Adjustments		$12,656,522.60
dd:		
Contributions from Taxes—Direct (Budget)	$395,982.00	
Contributions from Taxes—Capital Improvement Fund (Budget)	1,162,500.00	
Write-off of 1938 Bond Premium Unamortized	27.92	
Federal Grants Earned (Belle Air Island)	123,704.03	
Contributions from United Air Line	1,977,975.90	
Total Additions		3,660,189.85
		$16,316,712.45
educt:		
Loss for Twelve Months' Period Ending June 30, 1948	$463,852.15	
1945 Bond Redemption	1,500,000.00	
1945 Bond Interest	251,470.33	
Total Deductions		2,215,322.48
ance—June, 30, 1948		$14,101,389.97

SAN FRANCISCO AIRPORT
SCHEDULE No. 1
FIXED CAPITAL AND DEPRECIATION
1947-1948

		Balance June 30, 1947	Additions July 1, 1947 June 30, 1948	Retirements July 1, 1947 June 30, 1948	Adjustments July 1, 1947 June 30, 1948	Balance June 30, 1948	Accrued Depreciation June 30, 1948	Depreciation for 1948-1949
I	LAND	$1,405,727.81	$225,156.76	.....	.....	$1,630,884.57	.....	.....
II-1	LAND PLANE PORT—LANDING AREA:							
	(a) Land Reclamation and Improvement	$4,375,666.27	$8,366,806.21	.....	.....	$12,742,472.48	$264,913.07	$33,153.39
	(b) Field Drainage	341,851.81	67,740.11	.....	.....	409,591.92	95,398.83	14,558.61
	(c) Drainage Control	105,868.00	35,165.23	.....	.....	141,033.23	72,415.80	9,477.51
	(d) Runways Taxiways and Aprons	1,821,762.57	1,085,344.40	.....	.....	2,907,106.97	477,997.60	103,766.67
	(e) Landing Field Lighting and Marking	197,406.29	16,896.50	*$498.00*	.....	213,804.79	83,255.97	13,167.64
	Total Landing Area	$6,842,554.94	$9,571,952.45	*$498.00*	.....	$16,414,009.39	$993,981.27	$174,123.82
II-2	LAND PLANE PORT: UTILITIES, ROADS AND PARKING AREA:							
	(a) Roads, Walks, Parking Areas, Fences and Appurtenant Drainage	$206,366.60	$1,285,626.43	.....	.....	$1,491,993.03	$43,224.98	$68,583.62
	(b) Water Supply System	30,281.00	15,123.40	.....	.....	45,404.40	17,492.25	1,163.96
	(c) Sewerage System	20,773.00	11,931.99	.....	.....	32,704.99	6,913.15	1,090.16
	(d) Power Supply System and Street Lighting	53,806.52	40,321.27	*$600.00*	.....	93,527.79	22,183.27	2,766.79
	(e) Telephone System (Outside of Buildings)	4,441.00	.....	.....	.....	4,441.00	1,628.15	148.03
	(f) Gas Supply System	1,257.00	364.03	.....	.....	1,621.03	683.25	81.05
	(g) Bridges and Culverts	24,668.00	159,782.14	.....	.....	184,450.14	6,195.50	4,045.34
	(h) Landscaping	15,166.00	.....	.....	.....	15,166.00	4,874.10	589.82

(h) Landscaping	.....	.....	.....	.....	107,134.00	1,783.33	357.11
Total Utilities: Roads and Parking Areas..	$481,059.20	$1,514,694.30	*$600.00*	.....	$1,995,153.50	$112,071.65	$80,474.80
II-3-a-t LAND PLANE PORT—BUILDINGS.....	$1,896,084.10	$2,259,664.91	.....	.....	$4,155,749.01	$849,293.27	$93,131.41
II-4 LAND PLANE PORT EQUIPMENT:							
(a) Office Furniture and Appliances.....	$19,044.22	$2,156.16	*$1,289.64*	.....	$19,910.74	$11,301.86	$902.43
(b) Shop Tools and Building Maintenance Equipment	2,588.39	208.95	*68.01*	.....	2,729.33	1,225.31	236.79
(c) Fire Fighting Equipment.....	28,523.81	.....	*381.33*	.....	28,142.48	18,263.22	2,153.80
(d) Motor Driven Equipment.....	38,064.44	3,441.77	*686.08*	.....	40,820.13	31,407.76	1,806.71
(e) Meteorological Equipment	4,210.03	.....	.....	.....	4,210.03	3,416.17	148.94
(f) Drainage Pumphouse Equipment.....	8,000.80	.....	.....	.....	8,000.80	3,590.52	323.16
(g) Sewerage Pumphouse Equipment.....	2,901.03	.....	.....	.....	2,901.03	1,005.30	102.80
(h) Other Equipment	2,417.51	.....	*24.94*	.....	2,392.57	1,625.86	105.27
(i) Radio Equipment	24,189.51	306.35	.....	.....	24,495.86	16,498.07	672.62
Total Equipment	$129,939.74	$6,113.23	*$2,450.00*	.....	$133,602.97	$88,334.07	$6,452.52
III SEAPLANE PORT:							
(1) Land Reclamation and Improvement.....	$698,837.91	.....	.....	.....	$698,837.91	$13,545.39	$1,215.40
(2) Utilities	7,787.00	.....	.....	.....	7,787.00	2,076.85	259.57
Total Seaplane Port.....	$706,624.91	.....	.....	.....	$706,624.91	$15,622.24	$1,474.97
U. S. NAVY GRANT.....	$3,422,815.00	.....	.....	.....	$3,422,815.00	$707,747.79	$176,937.59
Grand Totals	$14,884,805.70	$13,577,581.65	*$3,548.00*	.....	$28,458,839.35	$2,767,050.29	$532,595.11

Italic figures denote loss and deficiency.

SAN FRANCISCO AIRPORT
SCHEDULE No. 2
1938 AIRPORT BOND FUND
STATEMENT OF ANNUAL BOND INTEREST AND REDEMPTION BY FISCAL YEARS
DETAIL OF AMORTIZATION OF BOND PREMIUM—ACCRUAL BASIS

Date Sold	Premium	Accrued Interest	Rate of Interest	Lot 1 2%	Lot 2 1¾%	Lot 3 1 7/10%	Lot 4 ½%	Lot 5 1¾%	Lot 6 2%	Lot 7 1½%	Total
February 25, 1938	$714.35	$1,950.00	2%	$650,000	.....	.....	.....	.....	.....	.....	$650,000
August 4, 1938	561.20	489.27	1¾%	.....	$305,000	.....	.....	.....	.....	.....	305,000
February 23, 1939	1,885.00	1,596.11	1 7/10%	.....	.....	$650,000	.....	.....	.....	.....	650,000
August 16, 1939	.....	77.50	½%	.....	.....	.....	$124,000	.....	.....	.....	124,000
August 16, 1939	.....	385.00	1¾%	.....	.....	.....	.....	$176,000	.....	.....	176,000
July 9, 1940	463.00	233.33	2%	.....	.....	.....	.....	.....	$525,000	.....	525,000
July 9, 1940	.....	140.00	1½%	.....	.....	.....	.....	.....	.....	$420,000	420,000
	$3,623.55	$4,871.21		$650,000	$305,000	$650,000	$124,000	$176,000	$525,000	$420,000	$2,850,000

Date	Fiscal Year	ANNUAL BOND REDEMPTION							
January 1, 1940	1939-40	$65,000	$31,000	$65,000	$124,000	.....	.....	.....	$285,000
January 1, 1941	1940-41	65,000	31,000	65,000	.....	$19,000	$105,000	.....	285,000
January 1, 1942	1941-42	65,000	31,000	65,000	.....	19,000	105,000	.....	285,000
January 1, 1943	1942-43	65,000	31,000	65,000	.....	19,000	105,000	.....	285,000
January 1, 1944	1943-44	65,000	31,000	65,000	.....	19,000	105,000	.....	285,000
January 1, 1945	1944-45	65,000	30,000	65,000	.....	20,000	105,000	.....	285,000
January 1, 1946	1945-46	65,000	30,000	65,000	.....	20,000	.....	$105,000	285,000
January 1, 1947	1946-47	65,000	30,000	65,000	.....	20,000	.....	105,000	285,000
January 1, 1948	1947-48	65,000	30,000	65,000	.....	20,000	.....	105,000	285,000
January 1, 1949	1948-49	65,000	30,000	65,000	.....	20,000	.....	105,000	285,000
		$650,000	$305,000	$650,000	$124,000	$176,000	$525,000	$420,000	$2,850,000

ANNUAL BOND INTEREST EXPENSE

Fiscal Year								
1937-38	$4,550	.....	.....	.....	.....	.....	.....	$4,550.00
1938-39	13,000	$4,848.23	$3,928.89	.....	.....	.....	.....	21,777.12
1939-40	12,350	5,066.25	10,497.50	$232.50	$2,695.00	.....	.....	30,841.25
1940-41	11,050	4,523.75	9,392.50	.....	2,913.75	$9,216.67	$6,160.00	43,256.67
1941-42	9,750	3,981.25	8,287.50	.....	2,581.25	7,350.00	6,300.00	38,250.00
1942-43	8,450	3,438.75	7,182.50	.....	2,248.75	5,250.00	6,300.00	32,870.00
1943-44	7,150	2,896.25	6,077.50	.....	1,916.25	3,150.00	6,300.00	27,490.00
1944-45	5,850	2,362.50	4,972.50	.....	1,575.00	1,050.00	6,300.00	22,110.00
1945-46	4,550	1,837.50	3,867.50	.....	1,225.00	.....	5,512.50	16,992.50
1946-47	3,250	1,312.50	2,762.50	.....	875.00	.....	3,937.50	12,137.50
1947-48	1,950	787.50	1,657.50	.....	525.00	.....	2,362.50	7,282.50
1948-49	650	262.50	552.50	.....	175.00	.....	787.50	2,427.50
	$82,550	$31,316.98	$59,178.89	$232.50	$16,730.00	$26,016.67	$43,960.00	$259,985.04

DETAIL OF AMORTIZATION OF PREMIUM

Fiscal Year								
1937-38	$39.37	.....	.....	.....	.....	.....	.....	$39.37
1938-39	112.50	$86.88	$125.15	.....	.....	.....	.....	324.53
1939-40	106.88	90.79	334.37	.....	.....	.....	.....	532.04
1940-41	95.63	81.07	299.18	.....	.....	$164.02	.....	639.90
1941-42	84.38	71.34	263.98	.....	.....	130.80	.....	550.50
1942-43	73.12	61.62	228.78	.....	.....	93.43	.....	456.95
1943-44	61.87	51.90	193.58	.....	.....	56.06	.....	363.41
1944-45	50.62	42.34	158.39	.....	.....	18.69	.....	270.04
1945-46	39.37	32.93	123.19	.....	.....	.....	.....	195.49
1946-47	28.12	23.52	87.99	.....	.....	.....	.....	139.63
1947-48	16.87	14.11	52.79	.....	.....	.....	.....	83.77
1948-49	5.62	4.70	17.60	.....	.....	.....	.....	27.92
	$714.35	$561.20	$1,885.00	.....	.....	$463.00	.....	$3,623.55

SAN FRANCISCO AIRPORT
SCHEDULE No. 3
1945 BOND FUND

STATEMENT OF ANNUAL BOND INTEREST AND REDEMPTION BY FISCAL YEARS

Date Sold	Premium	Accrued Interest	Rate of Interest	Series "A" Lot No. 1 3%	Series "A" Lot No. 2 ½%	Series "B" Lot No. 3 1%	Series "C" Lot No. 4 2½%	Series "C" Lot No. 5 1¼%	Series "C" Lot No. 6 1½%	Series "D" Lot No. 7 2%	Series "D" Lot No. 8 1½%	Total
March 1, 1946	$3,500.00	$3,166.67	3%	$500,000	.....	.....	.....	.....	.....	.....	.....	$500,000
March 1, 1946		4,750.00	½%	.....	$4,500,000	.....	.....	.....	.....	.....	.....	4,500,000
August 29, 1946	9,100.00	4,111.11	1%	.....	.....	$2,000,000	.....	.....	.....	.....	.....	2,000,000
February 7, 1947	5,019.00	3,611.11	2½%	.....	.....	.....	$1,000,000	.....	.....	.....	.....	1,000,000
February 7, 1947		11,736.11	1¼%	.....	.....	.....	.....	$6,500,000	.....	.....	.....	6,500,000
February 7, 1947		2,166.67	1½%	.....	.....	.....	.....	.....	$1,000,000	.....	.....	1,000,000
March 15, 1948	400.00	977.78	2%	.....	.....	.....	.....	.....	.....	$400,000	.....	400,000
March 15, 1948		2,933.33	1½%	.....	.....	.....	.....	.....	.....	.....	$1,600,000	1,600,000
	$18,019.00	$33,452.78		$500,000	$4,500,000	$2,000,000	$1,000,000	$6,500,000	$1,000,000	$400,000	$1,600,000	$17,500,000

Date	Fiscal Year	ANNUAL BOND REDEMPTION								
Dec. 15, 1946	1946-47	$500,000	.....	.....	.....	.....	.....	.....	.....	$500,000
Dec. 15, 1947	1947-48	.....	$500,000	.....	.....	.....	.....	.....	.....	500,000
June 15, 1948	1947-48	.....	.....	$500,000	.....	.....	.....	.....	.....	500,000
Dec. 15, 1948	1948-49	.....	1,000,000	.....	$250,000	.....	.....	.....	.....	1,250,000
Feb. 1, 1949	1948-49	.....	.....	.....	.....	.....	.....	$400,000	.....	400,000
June 15, 1949	1948-49	.....	.....	500,000	.....	.....	.....	.....	.....	500,000
Dec. 15, 1949	1949-50	.....	1,500,000	.....	250,000	.....	.....	.....	.....	1,750,000
Feb. 1, 1950	1949-50	.....	.....	.....	.....	.....	.....	.....	$400,000	400,000
June 15, 1950	1949-50	.....	.....	500,000	.....	.....	.....	.....	.....	500,000
			1,500,000		500,000	.....	.....	.....	.....	2,000,000

Feb. 1, 1951	1950-51	.....	.....	.....	.....	.....	.....	.....	400,000	400,000
June 15, 1951	1950-51	.....	.....	500,000	.....	.....	.....	.....	.....	500,000
Dec. 15, 1951	1951-52	.....	.....	.....	.....	$500,000	.....	.....	.....	500,000
Feb. 1, 1952	1951-52	.....	.....	.....	.....	.....	.....	.....	400,000	400,000
Dec. 15, 1952	1952-53	.....	.....	.....	.....	500,000	.....	.....	.....	500,000
Feb. 1, 1953	1952-53	.....	.....	.....	.....	.....	.....	.....	400,000	400,000
Dec. 15, 1953	1953-54	.....	.....	.....	.....	1,000,000	.....	.....	.....	1,000,000
Dec. 15, 1954	1954-55	.....	.....	.....	.....	1,750,000	.....	.....	.....	1,750,000
Dec. 15, 1955	1955-56	.....	.....	.....	.....	1,750,000	.....	.....	.....	1,750,000
Dec. 15, 1956	1956-57	.....	.....	.....	.....	1,000,000	$1,000,000	.....	.....	2,000,000
		$500,000	$4,500,000	$2,000,000	$1,000,000	$6,500,000	$1,000,000	$400,000	$1,600,000	$17,500,000

ANNUAL BOND INTEREST EXPENSE

Fiscal Year									
1945-46	$4,333.33	$6,500.00	.....	.....	.....	.....	.....	.....	$10,833.33
1946-47	7,500.00	22,500.00	$15,888.89	$8,888.89	$28,888.89	$5,333.33	.....	.....	89,000.00
1947-48	.....	21,250.00	20,000.00	25,000.00	81,250.00	15,000.00	.....	.....	162,500.00
1948-49	.....	17,500.00	15,000.00	21,875.00	81,250.00	15,000.00	$7,022.22	$21,066.67	178,713.89
1949-50	.....	11,250.00	10,000.00	15,625.00	81,250.00	15,000.00	.....	24,000.00	157,125.00
1950-51	.....	3,750.00	5,000.00	6,250.00	81,250.00	15,000.00	.....	18,000.00	129,250.00
1951-52	.....	.....	.....	.....	78,125.00	15,000.00	.....	12,000.00	105,125.00
1952-53	.....	.....	.....	.....	71,875.00	15,000.00	.....	6,000.00	92,875.00
1953-54	.....	.....	.....	.....	62,500.00	15,000.00	.....	.....	77,500.00
1954-55	.....	.....	.....	.....	45,312.50	15,000.00	.....	.....	60,312.50
1955-56	.....	.....	.....	.....	23,437.50	15,000.00	.....	.....	38,437.50
1956-57	.....	.....	.....	.....	6,250.00	7,500.00	.....	.....	13,750.00
	$11,833.33	$82,750.00	$65,888.89	$77,638.89	$641,388.89	$147,833.33	$7,022.22	$81,066.67	$1,115,422.22

THE FIRST FIFTY

Parade down Market street of new buses for 5 and 21 lines.

MUNICIPAL RAILWAY OF SAN FRANCISCO

WILLIAM H. SCOTT

General Manager

WM. H. SCOTT
General Manager, Municipal Railway

The fiscal year ended June 30, 1948, marked the completion of thirty-five and one-half years of continuous operation of the Municipal Railway, the last three and three-quarter years being consolidated operation with the acquired properties purchased from the former Market Street Railway Company on September 29, 1944.

As of the close of the fiscal year and in the months of July and August, 1948, the railway's transit system definitely showed an advance in the modernization program with the arrival and placing in operation of 209 new motor coaches, 24 new trolley coaches, and 10 new street cars.

The construction of garage and shop facilities, track removals and repaving of streets, overhead trolley installations and track reconstruction on Geary Street, Broderick to Masonic, were well under way and gave visual evidence of the progress being made in the railway's transit system.

The inner track reconstruction on Market Street, from Eddy to Valencia, was completed, street car operation on the outer tracks from Kearny Street west, was discontinued, and motor coach operation was substituted on lines 5, 6, 7 and 21.

Comments will be made in the following pages of this report on the improvement in service brought about by reason of the operation of the new equipment.

During the five fiscal years from July 1, 1941, to June 30, 1946, the railway, as a result of the abnormal wartime and subsequent swollen traffic demands and the then prevailing lower wages and other costs, enjoyed a period of operation resulting in a large profit amounting to $4,680,851.

These funds were available for payments on the purchase of the Market Street Railway Company properties and for the rehabilitation and reconstruction of the railway.

In the fiscal year, July 1, 1946, to June 30, 1947, increased wage, material, and other costs, and a gradual reduction in riding, resulted in a loss from operations of $531,150.

In the past fiscal year, July 1, 1947, to June 30, 1948, due to further mandatory wage increases, in accordance with Charter Section 151.3, and also to the still higher material and other costs, operations showed a loss of $1,507,837.

Were it not for various operating economies resorted to, such as service adjustments and the substitution of motor coach operation for street car operation on nights, Sundays, and holidays, on many lines, the loss would have reached a much higher figure.

Bond Issues for Modernization and Rehabilitation:

Due to the urgency for improved and modernized transit facilities and the requirement of funds for the execution of such a program at the time, certain general obligation bond issues were submitted to the electorate on November 4, 1947, and were approved by large margins. These approved bond proposals were as follows:

No. 1—$20,000,000—For modernization of the entire municipal transit system, through acquisition of new vehicles, modernization of existing equipment, reconstruction of tracks, shops, garages, and the electrical system.

No. 2—$2,200,000—For payment of the remaining debt to the Market Street Railway Company.

No. 3—$22,850,000—For street improvements, including the removal of approximately 160 miles of street railway track and the reconstruction of these streets from curb to curb, the construction of laterals and tunnels, major thoroughfare extensions, and the installation of a system of modern three-light synchronized traffic signals.

No. 4—$5,000,000—For a fund to enable the city to stimulate the providing of adequate off-street parking facilities, both within and on the fringes of the metropolitan traffic district, with the view of making possible the maximum use of downtown streets by auto traffic and mass transit.

No. 5—A Charter Amendment, which is a companion measure to No. 2 above, legalizing the payment of the balance of the Market Street Railway Company properties.

Also at the same election, a Charter Amendment was approved adding Section 119.3, making mandatory the retention of the present and existing Municipal Railway owned cable car system.

Bond Sales:

Of the $20,000,000 bond issue for the railway rehabilitation and modernization, a block of $6,500,000 has been sold, bearing date of February 1, 1948, and a block of $4,900,000, bearing date of August 1, 1948. The redemption dates on these bonds run annually to August 1, 1963.

Of the $2,200,000 bond issue for the payment of the balance of the Market Street Railway Company purchase, $1,950,000 has been sold. From the proceeds of this sale, the Municipal Railway, on May 7, 1948, paid the Market Street Railway Company $1,881,398.71 on the principal and $63,946.99 in interest, thus liquidating all debt to the Market Street Railway Company on the purchase.

The expenditure of funds and the payments for redemption and interest on the above two bond issues are being assumed by the Municipal Railway.

The expenditure of the $22,850,000 street improvement bond issue and the $5,000,000 off-street parking bond issue, and the responsibility for interest and redemption at present are being assumed by city departments other than the railway.

THE OLD AND THE NEW

Ancient single-truck street car and articulated bus used on Market street boosting modernization.

$20,000,000 Rehabilitation Modernization Bonds
Allocations of $11,400,000 Sale of Above Issue:

As of October 31, 1948, this fund shows:

Expenditures	$4,092,012.29
Encumbrances	5,997,995.79
Unencumbered Balance	1,309,991.92
Total	$11,400,000.00

The allocations provide for the following:

Equipment		
259—44-Passenger Motor Coaches	$4,157,488.00	
219—Motors for Fare Boxes	15,787.00	
190—44-Passenger Trolley Coaches	3,684,711.00	
Modernization of 55 Existing Street Cars	166,725.00	$8,024,711.00
Carhouses, Garages, and Equipment		
Geary and Potrero Car Houses Including Equipment	886,821.05	
Ocean Bus Yard Including Equipment	803,947.90	
McAllister Street Yard	39,839.63	
General Shop	75,000.00	1,805,608.58
Trolley Coach Overhead Construction		
McAllister and Hayes Street Lines	285,000.00	
Haight-Masonic Streets Line	90,342.00	
Haight-Sunset Line	188,574.00	
Fillmore Street Line	306,237.60	
Market Street Operation	107,555.00	
Mission Street Operation (Partial)	12,000.00	989,708.60
Track Reconstruction		
Replacement of Inner Tracks on Market Street, Eddy Street to Valencia Street	265,000.00	
Miscellaneous Locations	26,381.62	291,381.62
Cable Car Turntable		
Reconstruction of turntable at Powell and Market Streets		$20,000.00
Contingencies		
Includes preliminary expenses, legal expenses, and office plans and specifications		43,680.42
Materials and Supplies		224,909.78
Total Amount of Bond Sales as of October 31, 1948		$11,400,000.00

To August 31, 1948, from bond fund monies, 209 forty-four passenger motor coaches have been received and placed in operation on the following lines where street car operation has been discontinued:

No. 3—Sutter-Jackson	No. 7—Haight-Ocean
No. 4—Sutter-Sacramento	No. 21—Hayes
No. 5—McAllister	No. 22—Fillmore
No. 6—Haight-Masonic	No. 25—Bryant

The new Ocean garage construction is well under way, a major portion of the grading having been performed, and gasoline dispensing facilities and bus pits having been constructed.

About 87 motor coaches, serving some 13 routes, are now operating from this station.

Land adjacent to the Geary Street carhouse has been purchased at a cost of $98,000, for use in connection with the new bus garage at this location.

Overhead trolley coach construction on the No. 22 Fillmore line is also progressing.

The inner track reconstruction on Market Street from Eddy to Valencia has been completed and is now in operation.

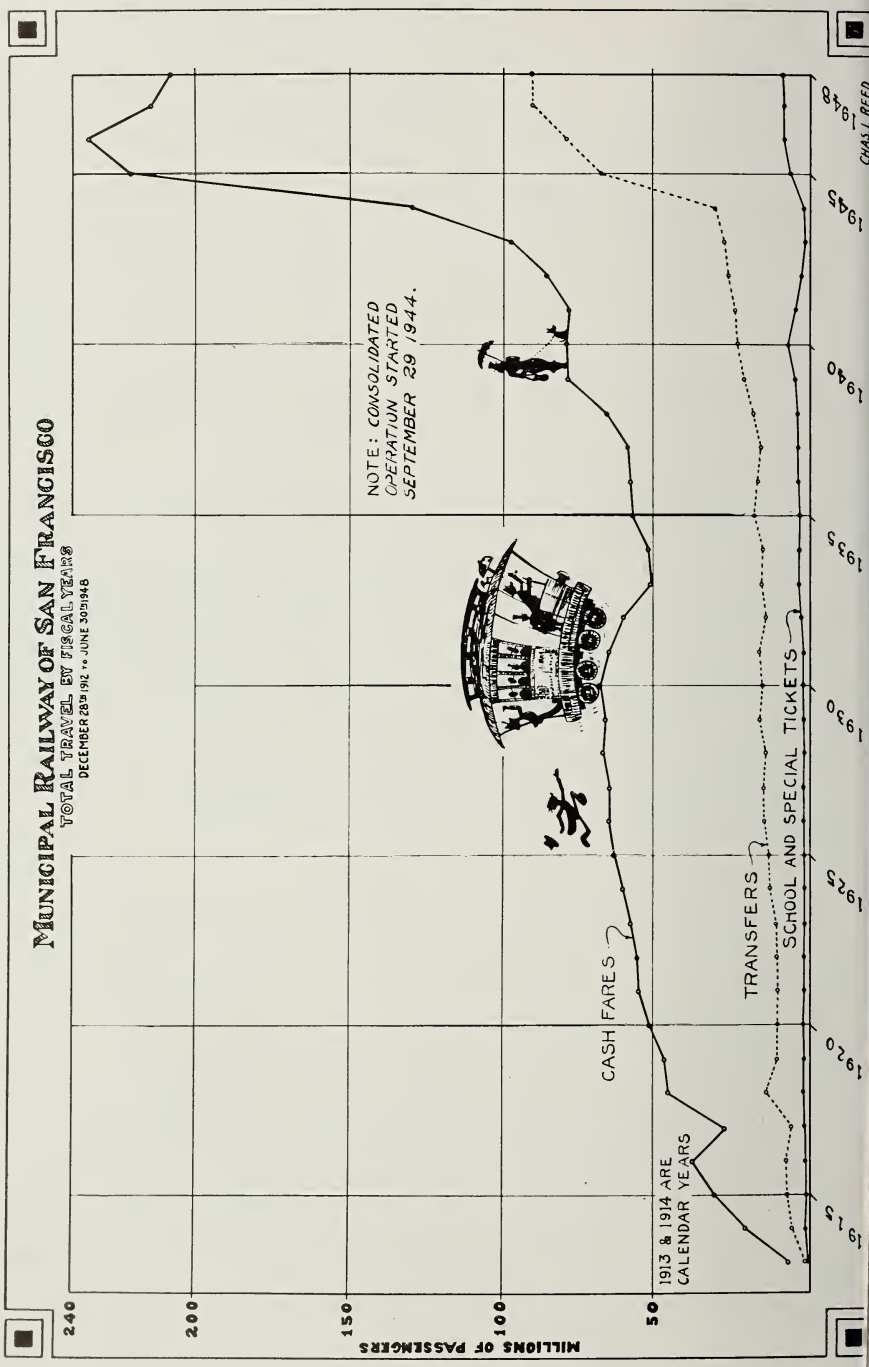
Track Removals from Street Improvement Bond Fund:

From the monies provided from the Street Improvement Bond Fund being administered by the Department of Public Works, tracks have been removed, and the streets repaved on Polk Street, Kearny Street, Sansome Street, Folsom Street, and Sacramento Street. Work of track removal is now under way on McAllister Street and on the portion of the No. 22 line from Sixteenth and Church Streets east.

Plant and Equipment Expenditures from Municipal Railway Funds Other than Bond Funds:

Exclusive of amounts expended from the 1947 Bond Fund, since the date of consolidation, September 29, 1944, to June 30, 1948, the Municipal Railway has also expended in excess of $5,000,000 from the railway Reconstruction and Replacement Fund and Operating Fund for new street cars, motor coaches, trolley coaches, new construction, and replacements of plant and equipment. Of this amount, $688,751.58 was received from the Market Street Railway Impounded Excess Fare Monies. Some of the major items are detailed below:

Motor Coaches—137 Motor Coaches (121 new, 16 used) ..... In addition to these, 209 motor coaches were received which were purchased from the 1947 Bond Fund at a cost of $3,368,275.	$1,759,033
Trolley Coaches—36 New Trolley Coaches	719,878
Street Cars—10 New Street Cars	278,730
Replacement Job No. 1410—Removal of the 4 tracks on Market Street between Valencia and Castro Streets, replacing the inner tracks and repaving the outer track area. Work completed October, 1945. Total cost	317,402
Replacement Job No. 1575-M—Reconstruction of Mission Street tracks between Otis and Thirteenth Streets. Work completed November, 1945. Total cost	41,801
Replacement Job No. 1607—Reconstruction of tracks on Church Street from Twenty-fifth to Twenty-seventh, and from Market Street to Seventeenth Street including branchoff at Twenty-fourth and Church Streets; outer tracks on Church Street from Market Street to Sixteenth Street removed and surface area repaved. Work completed October, 1946. Total cost	156,722
Extension and Betterment Job No. 283—Track reconstruction—extending tracks from Potrero Avenue to Bayshore Boulevard. Work completed December, 1946. Total cost	28,694
Extension and Betterment Jobs No. 272 and No. 273—Purchase and installation of a two-way radio system and a headway recorder system. In operation in January, 1947. Total cost	50,649


MUNICIPAL RAILWAY OF SAN FRANCISCO
TOTAL TRAVEL BY FISCAL YEARS
DECEMBER 28TH 1912 • JUNE 30TH 1948
MILLIONS OF PASSENGERS
240
200
150
100
50
1913 & 1914 ARE CALENDAR YEARS
CASH FARES
TRANSFERS
SCHOOL AND SPECIAL TICKETS
NOTE: CONSOLIDATED OPERATION STARTED SEPTEMBER 29 1944.
1915
1920
1925
1930
1935
1940
1945
1948
CHAS. L. REED

Replacement Job No. 1646-M—Reconstruction of inner tracks on Market Street from Fremont Street to Eddy Street. Work completed May, 1947. Total cost..... 206,276

Replacement Job No. 1566-M—Old office building at Turk and Webster Streets was replaced by a new office building. The Geneva Avenue office building was remodeled. And other miscellaneous replacements were made in railway buildings. Work performed at various dates to June 30, 1947. Total cost..... 71,158

Replacement Job No. 1520 and Extension and Betterment Jobs No. 251 and No. 280—Construction in connection with the conversion of electric street car line "E" to trolley coach operation, including cost of 16 trolley coaches. Complete trolley coach operation in July, 1947.

Cost of Construction	$171,781
Cost of Trolley Coaches	255,607
Total cost	427,388

Extension and Betterment Job No. 275—Additions to Geary Street Car House offices, including new central money receiving room. Completed in May, 1948. Total cost..... 146,995

Land Purchases—Assessor's block No. 19—bounded by Beach, North Point, Stockton, and Powell Streets. Being used as a material storage yard. Purchased May, 1947. Total Cost..... 184,123

Parcel of land adjacent to Geary Street Car House fronting on Presidio Avenue and on Euclid Street. Purchased May, 1946. Total cost 49,707

Extension and Betterment Job No. 260—Construction of tracks across Market Street from Stockton Street to Fourth Street. Work completed September, 1947. Total cost..... 88,423

Replacement Job No. 1769—Replacement and relocation of tracks and overhead facilities on Geary Street from Broderick to Masonic Street. Incomplete as of August 31, 1948. Total estimated cost... 174,250

Replacement Jobs—Twenty-fourth Street Motor Coach Garage—Nos. 1547-M, 1548-M, 1563-M, 1666-M, 1735-M, 1738-M, 1801-M, E and B Job No. 284. Under the above job numbers, expenditures were made for improvements and replacements at the motor coach garage at Twenty-fourth and Utah Streets, including improved ventilation, enlarged stores facilities and offices, electric hoists, material chutes, twin post hydraulic coach lifts, modern fuel dispensing equipment, floor area paving, work pit facilities, bench illumination, and the addition of many items of repair tools and equipment. Work performed at various dates to June 30, 1948. Total cost 119,995

Replacement Jobs Nos. 1650 and 1657-M—Six new coin counting machines (1 delivered and 5 on order). Total estimated cost..... 20,857

Miscellaneous Other Capital Expenditures—During the period September 29, 1944, to June 30, 1948, various other capital expenditures were made from railway funds other than bond funds for garage, shop, and office equipment, automotive service equipment, building improvements, and reconstruction, miscellaneous track, paving, and overhead reconstruction, and replacement. Total amount expended, estimated..... $600,000

In addition to the foregoing itemization of capital expenditures for plant and equipment and new construction, totaling over $5,000,000 paid from railway earnings, there was also paid from earnings the amount of $5,618,601 to the Market Street Railway Company on the $7,500,000 purchase price, the balance being from the 1947 Refinancing Bond Fund. Normal operating expenses for repairs and maintenance to plant and equipment are additional to these figures.

PLANT AND EQUIPMENT PURCHASED AND PLACED IN SERVICE

BASED ON COST

December 28, 1912, to June 30, 1948
Sources of Funds

	Total	Paid From Earnings	Contributions, Taxes, and Other Sources	1947 Refinancing Bond Fund Unpaid	1947 Rehabilitation Bond Fund Unpaid	1910-1913 Bond Fund Unpaid
From 1910-1913 Bond Fund	$5,481,000	$4,981,000	.....	.....	.....	$500,000
From Contributions, Taxes and Other Sources	2,291,406	.....	$2,291,406	.....	.....	.....
From Market Street Railway Purchase	7,500,000	5,618,601	.....	$1,881,399	.....	.....
From 1947 Rehabilitation Bond Fund	1,855,494	.....	.....	.....	$1,855,494	.....
From Earnings	9,903,711	9,903,711	.....	.....	.....	.....
Total Plant and Equipment Purchased	$27,031,611	$20,503,312	$2,291,406	$1,881,399	$1,855,494	$500,000

Total Plant and Equipment Purchased	$27,031,611
Plant and Equipment Retired to June 30, 1948	3,360,957
Plant and Equipment on Hand and in Use June 30, 1948	$23,670,654

Note: The above figures include only the amount of $1,855,494 from the $20,000,000 1947 Rehabilitation Bond Fund representing the value of plant placed in service to June 30, 1948.

Plant and Equipment Purchased and Placed in Service:

The preceding statement shows the total amount of plant and equipment, based n cost, purchased and placed in service from the start of operations on December 8, 1912, to June 30, 1948, as $27,031,611. Of this total, the amount of $20,503,312 as provided from earnings of the railway, $2,291,406 from taxes, contributions, nd other sources, and $4,236,893 from unredeemed bond issues.

Plant and equipment retired based on cost amounts to $3,360,957, leaving the mount of $23,670,654 on hand and in use as of June 30, 1948.

Bond Interest Paid and Interest on Market Street Railway Purchase:

From December 28, 1912, to June 30, 1948, interest in the amount of $5,052,321 as paid on outstanding bonds and on the Market Street Railway purchase. Of his amount $4,988,374 was paid from railway earnings, and $63,947 was paid rom the 1947 Refinancing Bond Issue.

Market Street Railway Purchase Payments:

A detail of the payments to the Market Street Railway Company on the 7,500,000 purchase price for their operating properties is as follows:

September 28, 1944	$2,000,000.00
January 31, 1945	1,000,000.00
June 30, 1945	1,000,000.00
September 28, 1945	500,000.00
June 28, 1946	813,088.44
September 28, 1946	58,248.68
July 30, 1947	194,315.42
October 3, 1947	52,948.75
Total Payments from Railway Earnings	$5,618,601.29
May 7, 1948 from 1947 Refinancing Bond Fund	1,881,398.71
Total Payments	$7,500,000.00

Interest paid the Market Street Railway Company on the purchase totaled 397,159.20, of which amount $333,212.21 was from railway earnings and 63,946.99 from the 1947 Refinancing Bond Fund.

Passenger Vehicles:

As of the date of consolidation, September 29, 1944, the Municipal Railway cquired a total of 611 passenger vehicles from the Market Street Railway Company, which total consisted of 440 electric street cars, 38 cable cars, 124 motor oaches, and 9 trolley coaches.

At that time, the original Municipal Railway equipment totaled 288 vehicles, of hich electric street cars totaled 238, motor coaches 41, and trolley coaches 9.

The combined total numbered 899 vehicles: 678 electric street cars, 38 cable ars, 165 motor coaches, and 18 trolley coaches.

From September 29, 1944, to August 31, 1948, 170 acquired Market Street Railay Company and 28 original Municipal Railway vehicles have been retired.

In the same period, the railway received a total of 396 vehicles, numbering 10 electric street cars, 346 motor coaches, and 40 trolley coaches.

As of August 31, 1948, the railway owned a total of 1,097 vehicles, comprising 563 electric street cars, 27 cable cars, 449 motor coaches, and 58 trolley coaches.

In addition to the motor coaches owned, in the period from consolidation September 29, 1944, to April 30, 1948, the railway leased motor coaches from the United States Navy, varying in number up to 35. All such coaches were returned prior to June 30, 1948.

New Coaches on Order:

As of October 31, 1948, requisitions had been placed and bids called for on 190 new trolley coaches and 50 motor coaches.

MUNICIPAL RAILWAY OF SAN FRANCISCO
INVENTORY OF PASSENGER VEHICLES OWNED, RECEIPTS, AND RETIREMENTS

Original Municipal Railway and Purchases Subsequent to September 29, 1944 and Acquired Market Street Railway Combined Totals

	Electric Cars	Cable Cars	Motor Coaches	Trolley Coaches	Total
On Hand 9/29/44	678	38	165	18	899
Received 1944-1945	...	..	31	..	31
Retired 1944-1945	*9*	..	*1*	..	*10*
Balance 6/30/45	669	38	195	18	920
Received 1945-1946	...	..	36	..	36
Retired 1945-1946	*10*	..	*13*	..	*23*
Balance 6/30/46	659	38	218	18	933
Received 1946-1947	...	..	40	16	56
Retired 1946-1947	*60*	..	*5*	..	*65*
Balance 6/30/47	599	38	253	34	924
Received 1947-1948	...	..	145	24	169
Retired 1947-1948	*46*	*11*	*31*	..	*88*
Balance 6/30/48	553	27	367	58	1,005
Received to 8/31/48	10	..	94	..	104
Retired to 8/31/48	...	..	*12*	..	*12*
Balance 8/31/48	563	27	449	58	1,097

Italic figures denote loss and deficiency.

MUNICIPAL RAILWAY OF SAN FRANCISCO
INVENTORY OF PASSENGER VEHICLES OWNED, RECEIPTS, AND RETIREMENTS
July 1, 1944, to August 31, 1948
Acquired from Market Street Railway Company

	Electric Cars	Cable Cars	Motor Coaches	Trolley Coaches	Total
Received 9/29/44	440	38	124	9	611
Retired 1944-1945	*9*	..	*1*	..	*10*
Balance 6/30/45	431	38	123	9	601
Retired 1945-1946	*10*	..	*12*	..	*22*
Balance 6/30/46	421	38	111	9	579
Retired 1946-1947	*58*	..	...	..	*58*
Balance 6/30/47	363	38	111	9	521
Retired 1947-1948	*27*	*11*	*30*	..	*68*
Balance 6/30/48	336	27	81	9	453
Retired to 8/31/48	...	..	*12*	..	*12*
Balance 8/31/48	336	27	69	9	441

ORIGINAL MUNICIPAL RAILWAY AND PURCHASES SUBSEQUENT TO SEPTEMBER 29, 1944

	Electric Cars	Cable Cars	Motor Coaches	Trolley Coaches	Total
On Hand 7/1/44	238	..	41	9	288
Received 1944-1945	...	..	31	..	31
Retired 1944-1945	...	..	...	..	....
Balance 6/30/45	238	..	72	9	319
Received 1945-1946	...	..	36	..	36
Retired 1945-1946	...	..	*1*	..	*1*
Balance 6/30/46	238	..	107	9	354
Received 1946-1947	...	..	40	16	56
Retired 1946-1947	*2*	..	*5*	..	*7*
Balance 6/30/47	236	..	142	25	403
Received 1947-1948	...	..	145	24	169
Retired 1947-1948	*19*	..	*1*	..	*20*
Balance 6/30/48	217	..	286	49	552
Received to 8/31/48	10	..	94	..	104
Retired to 8/31/48	...	..	...	..	....
Balance 8/31/48	227	..	380	49	656

Italic figures denote loss and deficiency.

Transportation Changes, Service Improvements:

Since consolidation, the management of the railway has strived constantly for transit improvement with the facilities at hand, through reroutings, the institution of new motor and trolley coach routes, supplementing or replacing street car operation, and a vast number of schedule changes.

With the receipt of new passenger equipment, the changes and improvement in service have been greatly accelerated, and the improvement in service and riding facilities pronouncedly obvious to the riding public.

Some of the changes are noted below.

On October 6, 1946, the Sunset Express service was inaugurated providing rapid motor coach service from the Sunset district to the downtown district, resulting in a saving of from ten to fifteen minutes in traveling time between terminals.

On October 7, 1946, on the Third and Kearny line, all street car operation was discontinued and replaced by motor coach operation.

On December 5, 1946, line "H" was extended from the old terminal at Potrero Avenue and Army Street to Third Street and San Bruno Avenue.

On December 8, 1946, the old Haight Street division of the acquired Market Street Railway Company was abandoned on account of the bad physical condition of the building, and the lines operating from this division transferred to the McAllister, Geary and Sutro divisions.

On June 9, 1946, street car operation on street car line "E" was discontinued and conversion to trolley coach operation was begun. Complete conversion to trolley coach operation on line "E" and consolidation with old trolley coach line "R" was effected on July 20, 1947, operating from Lyon and Greenwich Streets to Army and South Van Ness Avenue.

On September 8, 1947, the construction of tracks across Market Street from Stockton Street to Fourth Street was completed, and line "F" commenced operating through service from Scott and Chestnut Streets to the Southern Pacific depot to render more adequate transportation into the factory and commercial district south of Market Street and to augment the commuter service between the Southern Pacific depot and Market Street.

In January, 1947, two new facilities were inaugurated designed to speed up schedules and to control and improve service. One is a two-way radio installation with transmitter located on Twin Peaks. This installation provides contact with two-way radio equipped automobiles. Central Control operated with radio station KCRJ and 29 mobile units. A radio receiver with a fixed frequency tuned to police radio station KGPD has also been installed, enabling operators of Central Control to be informed of fires and accidents which may affect the car lines or coach routes of the railway.

The other new facility is a headway recorder system, electrically recording headways. Both installations are operated from a central control at the Geary Street car house.

On June 7, 1948, the No. 5 McAllister and the No. 21 Hayes street car lines were replaced by motor coaches. Minimum vehicle headways were reduced from 5 minutes to 2½ minutes on the No. 5 McAllister line and from 4 minutes to 2¼ minutes on the No. 21 Hayes Street line, resulting in a decided improvement in service on these lines.

On July 4, 1948, the No. 6 Haight-Masonic and the No. 7 Haight-Ocean street car lines were converted to motor coach operation, resulting in a reduction in minimum vehicle headways from 8 minutes to 5 minutes on the No. 6 line and from 4 minutes to 2½ minutes on the No. 7 line.

On August 1, 1948, the No. 22 Fillmore, the No. 25 Bryant-San Bruno, and the No. 4 Sutter-Sacramento street car lines were wholly converted to motor coach operation, and the No. 3 Sutter-Jackson was partially converted to motor coach operation.

Minimum vehicle headways were reduced from 3⅛ minutes to 2½ minutes on the No. 22 Fillmore line. On the No. 3 Sutter-Jackson line, the motor coach replacement was partial, motor coaches operating from Polk and Sutter Streets to Presidio Avenue and California with express service from Fillmore to Van Ness. Street cars continued operation from Sutter and Fillmore to the Bridge Terminal. On the No. 4 Sutter-Sacramento line, street cars were entirely discontinued, and motor coaches operated from Seventh Avenue and Fulton Streets to Polk and Sutter, with an express area between Fillmore and Van Ness.

As of August 1, 1948, on account of the conversion of the No. 22 and No. 25 lines to motor coach operation, the old Fillmore car house was closed.

Since June 7, 1948, the old McAllister Street Division has been used as a motor coach division, and coach pits, gasoline-dispensing equipment and paving have been installed. The old building has been removed with the exception of a small portion used for operating offices.

Market Street Service Improvement:

With the discontinuance of street car operation on the outer tracks of Market Street from Kearny Street west and the operation of motor coaches on Market Street on lines 6, 7, 5 and 21, traffic congestion on Market Street west of Kearny was greatly reduced, and lines J, K, L, M and N showed a marked improvement in service.

Prior to the motor coach operation on Market Street, street car lines experienced normal delays in running time of from 14 to 22 minutes.

No Parking—No Stopping in Metropolitan Traffic District
Street Car—Skip Stops on Market Street:

The enforcement in March, 1948, of a "no stopping—no parking" regulation for automobiles between the hours of 4:00 p.m. and 6:00 p.m. on many of the streets in the downtown area, under penalty of having cars towed away, with the assessment of fees for towing and garaging, plus a fine for illegal parking, contributed to the improvement of service and the flow of traffic in this area.

Likewise service was greatly improved through the elimination of 13 street car stops on Market Street, which stops were eliminated effective July 26, 1948.

As the result of above changes, street cars are now operating on schedule during rush hour periods and passengers are reaching their destination 15 to 20 minutes earlier.

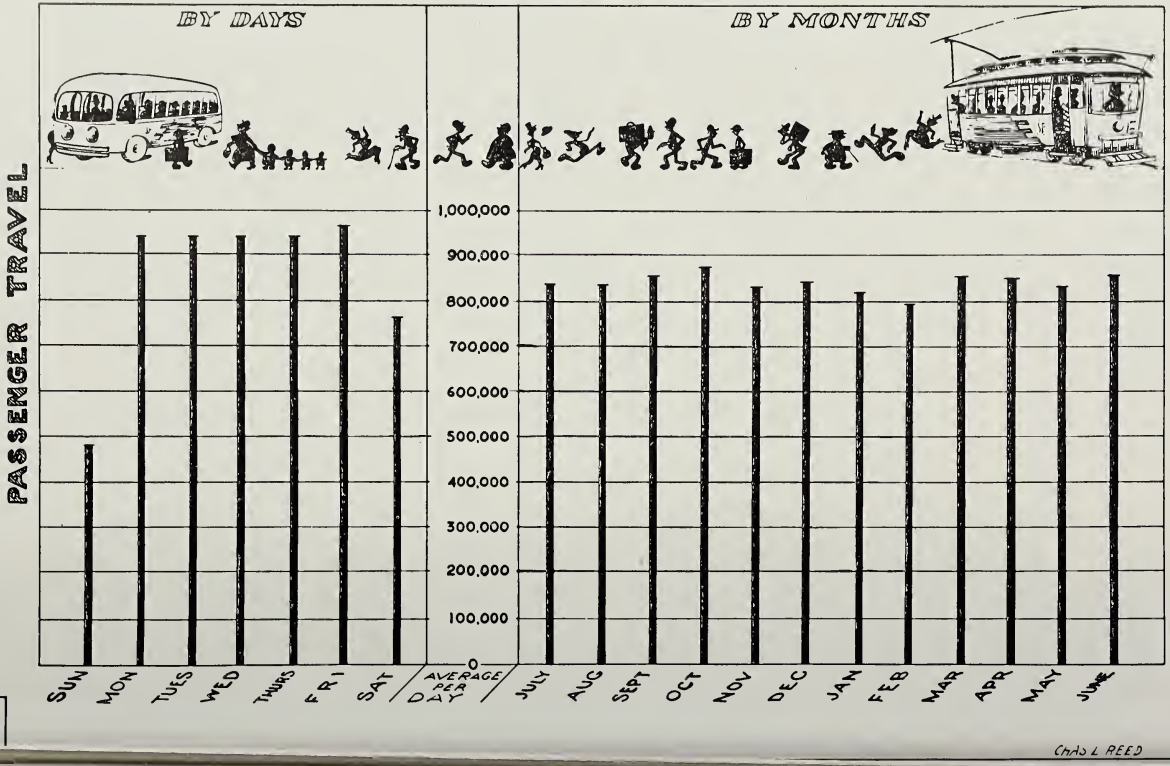
Conversion to Trolley Coach Operation:

Conversion from motor coach to trolley coach operation on the No. 22 Fillmore line is contemplated in December, 1948. Other lines to follow include the No. 5

MUNICIPAL RAILWAY OF SAN FRANCISCO

Average Daily Travel

FISCAL YEAR ENDING JUNE 30, 1948



McAllister, No. 21 Hayes, No. 6 Haight-Masonic, and No. 7 Haight-Ocean. Trolley coaches are also to operate on the inner sections of these lines on Market Street, replacing the present motor coaches.

Transit Studies and Plans:

Early in March, 1948, the city's technical committee on transportation needs released a report based on a survey being made by Charles E. DeLeuw, consulting engineer of the firm of DeLeuw Cather and Co. This report recommended detailed changes in lines from street car to trolley coach and motor coach operation with the retention of street cars on the Market Street tunnel lines and on Geary and Stockton Streets.

Later in March, 1948, an emergency transit plan, with the view of providing current transit improvement, was prepared by Colonel Sydney H. Bingham, New York transportation commissioner, recommending changes principally from street car to motor coach operation on all lines other than the Market Street tunnel lines, Geary Street, and Stockton Street. He also recommended retention of present cable car lines and trolley coach lines.

In August, 1948, a "work sheet" report was submitted by Charles E. DeLeuw of DeLeuw Cather & Co., outlining suggestions for a system of state-built freeways, a Market Street subway to Twin Peaks Tunnel, a modernized traffic signal installation, and plans for increased "one-way street" traffic.

Proposed California Street Cable Railroad Company Purchase:

At a primary election held on June 1, 1948, a bond issue proposal was submitted to the voters, proposing a bond issue in the amount of $200,000 for the purchase of the operative properties of the California Street Cable Railroad Company. The proposal failed to obtain the necessary two-thirds majority, the vote being 131,689 for, and 92,265 against.

Land Sales:

In accordance with Board of Supervisors' Resolution No. 6668, Series of 1939, adopted on June 30, 1947, the sale of the old acquired Market Street Railway Company's Haight Street car house and land-site was completed, the sale price amounting to $53,500, resulting in a profit on the sale of $26,089.

Transportation and Schedule Departments:

During the year, the work of the schedule and transportation departments continued to be a heavy task owing to transition taking place from electric street car to motor and trolley coach operation.

To indicate the volume of work encountered in the drafting of new schedules, the compilation of traffic checks, and the conducting of surveys for new routes and extensions, the following tabulation is given:

New Schedules Drafted	308
Traffic Checks Made	87
Observation Checks Made	161
Running Time Checks Made	58
Surveys for New Routes and Extensions	104

Under another section of this report entitled "Transportation Changes and Service Improvements," mention is made of various changes and improvements in service accomplished which were visibly obvious to the riding public. The receipt to June 30, 1948, of 145 new motor coaches and 24 trolley coaches, and the further receipt in July and August of an additional 94 motor coaches and 10 new type modern street cars were a major factor in the accomplishment of the service improvement.

As of August 31, 1948, passenger-carrying equipment owned consisted of 563 electric street cars, 27 cable cars, 58 trolley coaches, and 449 motor coaches—a total of 1,097 vehicles. Of the street cars mentioned, 126 are in the course of being sold as obsolete and unneeded.

New men trained in coach and street car operation during the year totaled 1,070 as compared with the number of 1,280 in the previous year. An additional number of 216 street car operators were retrained in motor and trolley coach operation.

The change taking place in the types of service rendered from street car to motor and trolley coach operation is noticeable from a review of the mileage operated by types of equipment in the year 1947-1948 as compared with the mileage operated in the two previous fiscal years as noted in the following tabulation:

MILEAGE OPERATED BY TYPES OF EQUIPMENT

Fiscal Year	Electric Street Car	Motor Coach	Trolley Coach	Cable Car	System Total
1947-1948	15,530,556	11,767,885	1,331,994	436,424	29,066,859
1946-1947	18,306,441	10,412,688	886,008	458,162	30,063,299
Inc. or Dec.	*2,775,885*	1,355,197	445,986	*21,738*	*996,440*
Inc. or Dec. %	*15.163*	13.015	50.337	*4.745*	*3.314*
1947-1948	15,530,556	11,767,885	1,331,994	436,424	29,066,859
1945-1946	19,889,939	8,352,364	824,440	388,204	29,454,947
Inc. or Dec.	*4,359,383*	3,415,521	507,554	48,220	*388,088*
Inc. or Dec. %	*21.918*	40.983	61.563	12.421	*1.318*

Italic figures denote loss and deficiency.

In addition to its regular work of drafting schedules and making traffic checks, the schedule department was engaged during the year on other activities of a special nature. Included in such activities was the conducting of traffic checks for use in the DeLeuw-Cather transit studies. This work required the assignment of from six to twenty employees from the schedule department over a period of about three months.

In connection with future conversions from street car to motor and trolley coach operation, the schedule department participated in conference with the railway management and conducted surveys necessary in this connection. Statistical data was compiled, and estimated vehicle schedule demand for new equipment was furnished to the railway engineering department.

At the request of the Research Department of the American Transit Association, the schedule department of the railway furnished all data required for the purpose of establishing a standard practice for schedule departments throughout the transit industry. The compilation of this data involved the time of one man for a period of two months during the year.

Two general sign-ups were conducted during the year covering the entire platform personnel of the railway.

A compilation in chronological order of reroutings, revisions, consolidations, and extensions of street car lines, motor and trolley coach routes made during the year is noted in the following statement.

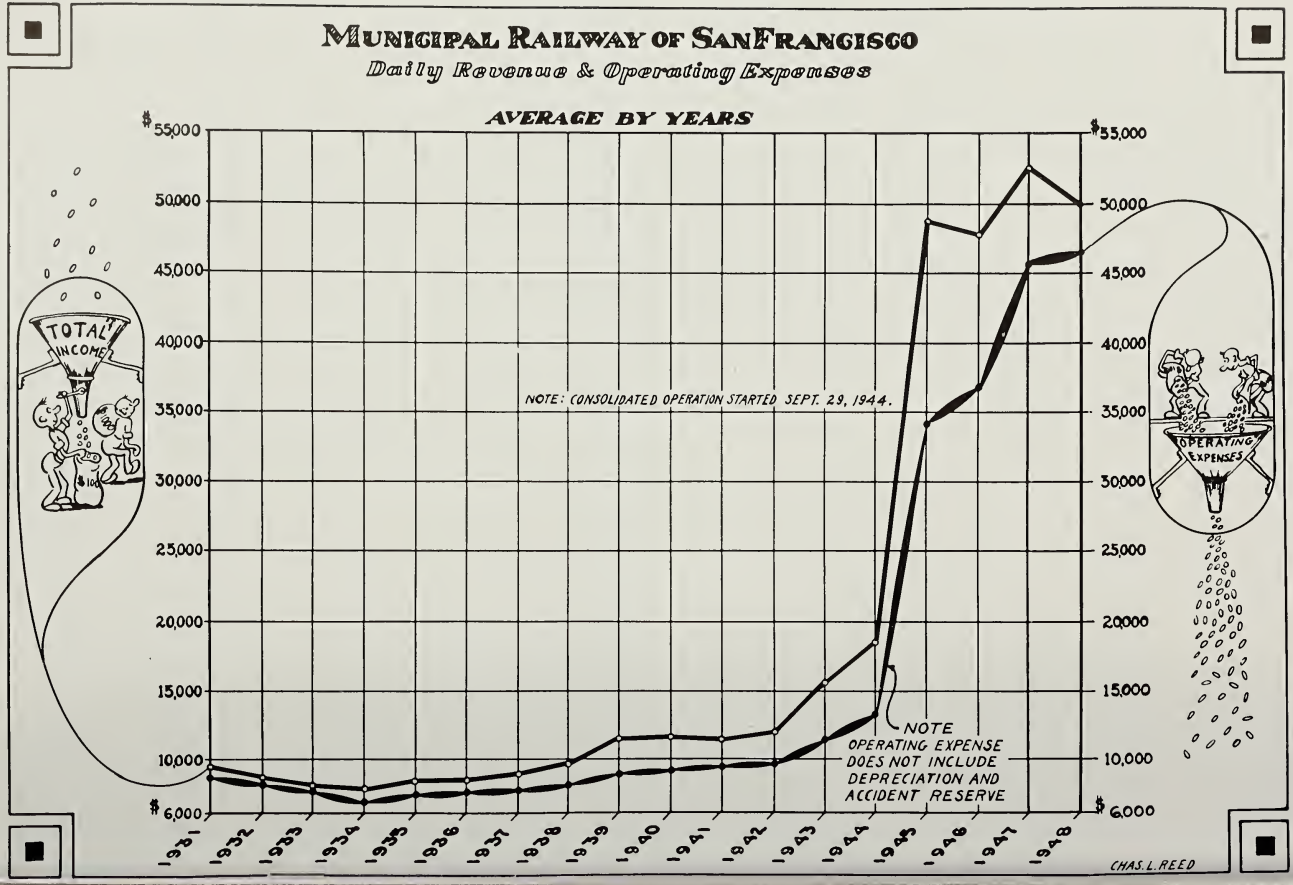
CHANGES IN STREET CAR LINES AND MOTOR COACH ROUTES
NEW LINES AND ROUTES
DISCONTINUANCE OF LINES AND ROUTES
EXTENSIONS AND RE-ROUTINGS

July 1, 1947 to June 30, 1948

Date	Line	Changes, Revisions, New Routings, etc.
7/ 7/47	No. 20	—New crossing installation on Market Street Line split in two with south end operation S. P. Depot to 4th and Market, and north end operation Ellis and Market to Ellis and Divisadero.
7/ 7/47	No. 20 M.C.	—Track construction on Market Street. Coaches detoured via Taylor, Sixth Street, Mission, Fourth Street, in both directions during periods of operation to Southern Pacific Depot.
7/20/47	"R" T.C.	—Discontinued. Consolidated with Route "E."
7/20/47	"E" T.C.	—Motor coaches discontinued. Trolley coach operation extended to Baker and Greenwich, and Route "R" consolidated with Route "E" to Army and South Van Ness. Trolley coach owl service from Baker and Greenwich to Beale and Howard.
7/28/47	No. 3 M.C.	—Route terminated at San Bruno Avenue and Alemany Boulevard (6:35 a.m.-7:24 p.m.). Coaches to Army and Potrero before 6:35 a.m. and after 7:24 p.m. Sunday service all coaches to Army and Potrero.
8/17/47	No. 40	—Operations confined San Mateo to Daly City. Service to Fifth and Market during peaks, weekdays and Saturdays only.
8/25/47	No. 29 M.C.	—Coaches rerouted via Visitacion Avenue, Rutland, Tioga, Wilde, to Third and Olney, serving Rutland Street in both directions. Service on Bayshore Boulevard and San Bruno Avenue discontinued.
9/ 7/47	No. 20 M.C.	—Track work on Market Street at Fourth completed. Coaches resume operation over established route.
9/ 8/47	"F"	—Line extended to Southern Pacific Depot 5:53 a.m. to 6:30 p.m. on weekdays and Saturdays. Evenings, Sundays and holidays line terminated at Fourth and Market south side.
9/ 8/47	No. 20	—South end operation discontinued due to extension of line "F."
9/27/47	No. 20	—Last day of street car operation.
9/29/47	No. 20 M.C.	—Motor coach service substituted for street cars. Coaches operating from Haight and Stanyan to Ellis and Market. Evenings, Sundays and holidays to S. P. Depot.
10/ 2/47	No. 5	—Track reconstruction completed to Eddy Street. Through service to bridge resumed.
10/ 2/47	No. 31	—Track reconstruction completed to Eddy Street. Through service to Ferry resumed.
10/ 2/47	No. 21	—Track reconstruction completed to Eddy Street. Through service to Ferry resumed.
10/ 5/47	No. 1	—Motor coach service substituted for street cars evenings, Sundays and holidays. Operating from Sansome and Sutter to 48th Avenue and Point Lobos.

Date	Line	Changes, Revisions, New Routings, etc.
10/ 5/47		No. 2—Motor coach service substituted for street cars evenings, Sundays and holidays. Operating from Sansome and Sutter to 48th Avenue and Point Lobos.
10/ 5/47		No. 10 M.C.—Route extended to 48th Avenue and Point Lobos, evenings, Sundays and holidays.
10/ 6/47		No. 15 M.C.—Service on route 16 absorbed by route 15. Fitzgerald Avenue established as an outer terminal and relief point. Alternate coaches to Arleta.
10/ 6/47		No. 16 M.C.—Discontinued. Last of operation 10/4/47.
10/ 7/47		"L"—Sewer construction. Street cars terminated at 48th Avenue and Taraval. Motor coach shuttle service from 46th Avenue and Taraval to 47th Avenue and Wawona.
10/ 8/47		"C"—Market Street track reconstruction completed. Through service to bridge resumed.
10/ 8/47		"D"—Market Street track reconstruction completed. Through service to Ferry resumed.
10/ 8/47		Nos. 1 and 2—Market Street track reconstruction completed. Through service to Ferry resumed.
10/ 8/47		Nos. 3 and 4—Market Street track reconstruction completed. Through service to bridge resumed.
10/13/47		No. 20 M.C.—Weekdays during a.m. and p.m. peak periods, alternate coaches turn back at Ellis and Divisadero.
10/17/47		No. 15 M.C.—Fitzgerald Avenue discontinued as terminal and relief point. Turn back coaches now to terminate at Wilde Avenue.
10/25/47		Nos. 1 and 2 M.C.—Alternate coaches terminated at Sixth Avenue and California on Saturday evenings.
10/26/47		"F"—During periods of operation to Southern Pacific Depot alternate cars terminate at Fourth and Market (south side) during off peak periods.
11/23/47		No. 26 M.C.—Route extended to Sweetwood and Washington (Broadmoor Tract) during a.m. and p.m. peaks. Weekday and Saturday alternate coaches to turn back at Daly City.
11/23/47		No. 3 M.C.—Route extended to Larkin and Sutter via Polk, Post, Larkin to Sutter.
11/23/47		No. 10 M.C.—Inner terminal re-established at Balboa and La Playa.
11/23/47		Nos. 1 and 2 M.C.—Route extended establishing outer terminal at Balboa and La Playa. Every third coach terminating at Sixth and California.
11/24/47		No. 15 M.C.—Wilde Avenue discontinued as an outer terminal. Route terminal extended to Arleta and Bayshore.
11/24/47		No. 18 M.C.—On Monday nights only, route extended to Fort Funston gate.
12/ 8/47		"L"—Motor coach shuttle discontinued. Regular line operation resumed. Sewer construction completed.
12/29/47		Nos. 1 and 2 M.C.—Motor coaches serving via Route 1 terminating at Sixth Avenue and California during all evening operation.
1/12/48		No. 7 M.C.—Partial reroute of line from present route at Foerster via Staples, Phelan and regular service route.
1/15/48		"H"—Service to U. S. Docks discontinued by request of the military authorities. Inner terminal established at Bay and Van Ness.
1/18/48		"C"—Motor coach service substituted for street cars, evenings, Sundays and holidays, operating from 33rd Avenue and California to Arguello and Geary.

Date	Line	Changes, Revisions, New Routings, etc.
1/18/48		No. 12—All pull-outs to 26th and Mission, thus discontinuing any street car operation on Valencia Street.
1/19/48		No. 8 M.C.—New motor coach route established to service upper Market Street, operating from Clayton and Market via Clayton, Market, Corbett to Market.
1/19/48		No. 19 M.C.—Larkin Street terminal eliminated. Route now to operate through service to Beach and Hyde.
2/ 8/48		"D"—Motor coach service substituted for street cars evenings, Sundays and holidays.
2/ 8/48		No. 7—Outer terminal established at Waller and Stanyan during evening, Sunday and holiday operation.
2/ 8/48		No. 2 M.C.—Evenings, Sundays and holidays shuttle operation between 48th Avenue and Noriega and 19th Avenue and Lincoln Way.
2/ 8/48		No. 10 M.C.—Service discontinued evenings, Sundays and holidays.
2/ 8/48		No. 20 M.C.—Evenings, Sundays and holidays route extended to Balboa and La Playa via Stanyan, Frederick, Lincoln Way, Great Highway, Balboa to La Playa.
2/ 8/48		No. 30 M.C.—New coach route established operating from Anza Street (Presidio Military Reservation) to Chestnut and Van Ness. Substitute service for line "D."
2/ 9/48		"C"—Additional p.m. peak service provided and turned back at Kearny Street.
2/ 9/48		"B"—Additional p.m. peak service provided and turned back at Kearny Street.
2/19/48		No. 8 M.C.—Route extended to Eureka and Market Streets.
3/13/48		No. 70 M.C.—Route discontinued. Area to be served by Route 54.
3/14/48		No. 54 M.C.—Rerouted to operate from 26th and Castro to Kirkwood and Dormitory. During a.m. and p.m. peaks also operates from San Francisco Naval Shipyards. Continuous trip with Ridge route service and direct service 26th and Castro to San Francisco Naval Shipyards.
3/14/48		No. 2 M.C.—Evenings, Sundays and holidays route extended to Fifth and Market via Lincoln Way, Frederick, Haight and Market Street.
3/14/48		No. 7—Street car service suspended evenings, Sundays and holidays due to extension of Route No. 2.
3/14/48		All Lines—California Daylight Saving Time in effect 2:01 a.m.
3/15/48		No. 32—New street car line in operation from Duboce and Market to Ferry (inner track construction on Market Street).
3/15/48		No. 5—All cars terminated at Jones and Market. Track reconstructed on Market (Eddy to Gough).
3/15/48		Nos. 6 and 7—All cars rerouted to Ferry via Mission Street. Track reconstruction on Market (Eddy to Gough).
3/15/48		No. 21—All cars terminated at Hayes and Market. Track reconstruction on Market (Eddy to Gough).
3/16/48		No. 30 M.C.—Coaches rerouted to operate on Union Street.
3/19/48		No. 30 M.C.—Outer terminal established in Presidio adjoining street car terminal.
3/22/48		All Lines—Cars of all lines scheduled to bridge terminal will operate over the ramp middle track to Market Street.
3/29/48		No. 8 M.C.—Route extended to 18th and Castro Streets.
4/ 4/48		No. 14—Sunday service extended to Holy Cross Cemeteries (11:00 a.m.-4:30 p.m.).


MUNICIPAL RAILWAY OF SAN FRANCISCO
Daily Revenue & Operating Expenses
AVERAGE BY YEARS
$55,000
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
$6,000
NOTE: CONSOLIDATED OPERATION STARTED SEPT. 29, 1944.
NOTE
OPERATING EXPENSE
DOES NOT INCLUDE
DEPRECIATION AND
ACCIDENT RESERVE
1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948
TOTAL INCOME
$100
OPERATING EXPENSES
CHAS. L. REED

Date	Line	Changes, Revisions, New Routings, etc.
4/ 7/48		No. 19 M.C.—Coaches detoured via Mission, Eleventh Street, Polk, Grove, in both directions (track work on Market Street).
4/11/48		No. 30 M.C.—Route extended to new inner terminal at Geary Street and Van Ness Avenue.
4/26/48		Nos. 6 and 7—All cars turned back at Gough and Market. Track reconstruction on Market Street.
4/26/48		No. 2 M.C.—During operation to Fifth and Market coaches detoured from Haight via Octavia to Market in both directions.
4/28/48		No. 19 M.C.—Rerouting via Mission, Tenth, Polk and Grove discontinued. Coaches resume operations over established route.
5/ 6/48		No. 23 M.C.—Route extended to Earl and Kirkwood (Ridge route) via Palou, Industrial, Oakdale, Navy Road, Earl Street to Kirkwood.
5/25/48		No. 15 M.C.—Outbound coaches detoured via Columbus Avenue, Montgomery, New Montgomery, Mission, Third and regular route (Kearny Street reconstruction).
5/25/48		No. 42 M.C.—Outbound coaches detoured via Columbus Avenue, Montgomery, New Montgomery, Mission, Third, and regular route (Kearny Street reconstruction).
6/ 1/48		"E" T.C.—P.M. turn back coaches at Beale eliminated. All coaches operate p.m. through service.
6/ 6/48		"M"—All cars to bridge terminal.
6/ 6/48		"L"—All cars to bridge terminal 7:00 a.m. to 1:00 a.m.
6/ 6/48		No. 6 M.C.—Established early a.m. service 26th and Castro to 24th and Utah.
6/ 6/48		Marks first day of motor coach operations out of the McAllister Division.
6/ 7/48		No. 5—Motor coach service substituted for street car service. Last day of street car operation June 5, 1948.
6/ 7/48		No. 21—Motor coach service substituted for street car service. Last day of street car operation June 5, 1948.
6/ 7/48		Nos. 6 and 7—Track reconstruction completed. Service on Market Street resumed with inner terminal established at Ferry.
6/ 7/48		No. 8—Line now operating out of Geary Division.
6/ 7/48		No. 32—Line eliminated. Last day of operation June 5, 1948.
6/ 7/48		No. 5 M.C.—Motor coach service replacing street car service. Operating from Balboa and La Playa to Ferry, with alternate coaches terminating at 25th Avenue and Fulton.
6/ 7/48		No. 21 M.C.—Motor coach service replacing street car service. Operating from Eighth Avenue and Clement Street to Ferry.
6/ 8/48		No. 20 M.C.—A.M. coaches scheduled to turn back at Ellis and Divisadero now terminate at Oak and Divisadero.
6/11/48		"E" T.C.—Coaches rerouted via 26th Street, Mission 25th to South Van Ness. Outer terminal now established at 26th and Mission.
6/13/48		No. 30 M.C.—Coaches rerouted over Gough Street, between Union and Chestnut Streets.
6/20/48		Nos. 1 and 2 M.C.—Routes extended establishing inner terminal at Ferry.

Population Figures:

The population of San Francisco is now estimated at the figure of 807,700, according to the latest available figures. This compared with the census figure of 634,536 in 1940 shows an increase of 173,164, or 27.29 per cent.

There has been a similar great increase in population in the immediate bay area region adjacent to San Francisco. The five bay-area counties of San Francisco, Alameda, San Mateo, Marin and Contra Costa have an estimated population of 2,119,200. The nine counties of San Francisco, Alameda, San Mateo, Marin, Contra Costa, Santa Clara, Napa, Solano and Sonoma have an estimated population of 2,635,900.

The magnitude of the task of supplying San Francisco with adequate, modern transit facilities is greatly accentuated by reason of the hilly topographical features of the city, the density of its business, financial, hotel, and apartment house area, and the geographical layout of its streets, with many of its principal streets converging into the main artery of Market Street.

Round Trip Miles of Street Traversed:

The total round trip miles of streets traversed by street cars and coaches of the railway, as of August 31, 1948, totaled 524.72 miles, as compared with the figure of 492.11 miles three years previous on June 30, 1945, an increase of 32.61 miles.

Motor and trolley coach miles increased 133.73 miles, while street car miles decreased 101.12 miles.

A comparative statement of round trip miles of streets traversed by the various types of passenger vehicles of the railway on August 31, 1948, as compared with the figure on June 30, 1945, follows:

MUNICIPAL RAILWAY OF SAN FRANCISCO
ROUND TRIP MILES OF STREETS TRAVERSED
Comparison—August 31, 1948 and June 30, 1945

	Round Trip Miles of Streets Traversed		Increase or *Decrease*
	Aug. 31, 1948	June 30, 1945	
Electric Street Car	161.960	263.084	*101.12*
Cable Car	6.109	6.109	....
Total Electric and Cable	168.069	269.193	*101.12*
Motor Coach	332.190	205.920	126.27
Trolley Coach	24.460	17.000	7.46
Total Motor and Trolley Coach	356.650	222.920	133.73
Total Electric and Cable Cars and Motor and Trolley Coaches	524.719	492.113	32.60

Italic figures denote loss and deficiency.

Single Track Mileage and Motor and Trolley Coach Round Trip Miles of Streets Traversed:

The total miles of single track owned by the consolidated system as of June 30, 1948, is as follows:

Single Track Owned and Operated Including Spurs, Turn-outs, Sidings, and Car House Tracks		
Electric Street Car	222.534	
Cable Car	6.792	229.326
Single Track Owned—Non-Operated		
Electric Street Car	62.662	
Cable Car	2.360	65.022
Total Track Owned		294.348

Two trolley coach routes were operated totaling 24.46 round trip miles of street traversed.

Forty-eight motor coach routes were operated totaling 339.80 round trip miles of street traversed, and 431.27 round trip route miles.

Wages and Salaries:

A major item in the mounting costs of railway operation is the increase in the wages of platform personnel, mechanics, and other employees of the railway.

At a general election held on November 5, 1946, a charter amendment was voted upon amending section 151.3 of the Charter, which amendment provided for a standardized method for fixing wages of Municipal Railway platform men and bus operators. The amendment was approved by the voters by a vote of 181,059 "yes," to 55,557 "no." The amendment was ratified by the State Legislature on January 7, 1947.

This amendment provides that the wages of platform men and bus operators of the Municipal Railway shall be fixed each year at the average of the two highest wage schedules of platform employees and bus operators of other street railway systems in California in effect on July 1 of that year.

The Civil Service Commission is required to certify to the Board of Supervisors the two highest wage schedules, and the Board of Supervisors is required to fix a rate which is the average of the two.

The amendment provided that the wage schedules for the fiscal year 1946-1947 be so determined. Accordingly, the rate of $1.24 per hour was fixed for platform men and bus operators for the fiscal year commencing July 1, 1946, and the rate of $1.368 was fixed for the fiscal year commencing July 1, 1947.

The amendment further provides that in the event the average wage schedule of other railways as of July 1 in any year is less than the rates fixed by the Board of Supervisors on March 18, 1946, then the new rate shall be the same as the rates fixed March 18, 1946. These rates per hour for platform men were one dollar for the first six months, one dollar and five cents for the second six months, and one dollar and ten cents thereafter, and for bus operators one dollar and five cents per hour for the first six months, one dollar and ten cents for the second six months, and one dollar and fifteen cents thereafter.

Commencing July 1, 1946, the amendment further provides for time and one-half for six holidays each year and designates that platform employees and bus operators shall receive twenty cents per hour while instructing new employees.

The increased cost to the railway for the rate of $1.24 per hour fixed for the year 1946-1947, plus the overtime for six holidays and the twenty cents per hour for instructing, amounted to approximately $1,500,000. The rate of $1.368 paid in the past year, plus increases to other employees, resulted in a further increased cost of over $1,000,000.

Following is a tabulation of platform employees' wages since July 1, 1941.

PLATFORM WAGES

Rates and Effective Dates

Dates	Street Car Operators		Coach Operators	
	Per Hour	Per Day	Per Hour	Per Day
July 1, 1941	.75	6.00	.825	6.60
July 1, 1942	.80– .875	6.40–7.00	.875	7.00
July 1, 1943	.85– .925	6.80–7.40	.90– .975	7.20–7.8
July 1, 1944	.90– .975	7.20–7.80	.95–1.025	7.60–8.2
July 1, 1945	.90– .975	7.20–7.80	.95–1.025	7.60–8.2
July 1, 1946*	1.00–1.10	8.00–8.80	1.05–1.15	8.40–9.2
July 1, 1946	1.24	9.92*	1.24	9.92
July 1, 1947	1.368	10.944	1.368	10.944
July 1, 1948†	1.484	11.872	1.484	11.872

*Above revised by charter amendment voted upon November 5, 1946, and ratified January 7, 1947, retr active to July 1, 1946, to $1.24 per hour for all men.

†Above rate set effective July 1, 1948, but pending suit, to determine legality of rate, previous year's ra of $1.368 is being paid, and the difference is being impounded.

Wages and salaries of mechanics and other employees have advanced in simila ratio.

ORGANIZATION AND PERSONNEL

Management:

Wm. H. Scott ..... General Manag

Transportation:

Duke C. Ormsby ..... General Superintendent of Transportatio
Geo. W. Evington, Sr. ..... Superintendent of Transportatio
Harry E. Cooley ..... Assistant Superintendent of Transportatio
Thos. A. Cox (Retired April 21, 1948) ..... Division Superintende
Geo. S. Lewis ..... Division Superintende
Lawrence G. Marshall ..... Division Superintende
Wesley R. Mason ..... Division Superintende
James E. McDevitt ..... Division Superintende
Albert J. Schirmer ..... Division Superintende
Ralph Strawn ..... Division Superintende
Earl Ryan ..... Chief Clerk, Transportatio
Hobart G. Wilson ..... Chief Inspect
Harry J. Reedy ..... Senior Inspect
Renzy G. Hayton ..... Instruct
W. J. McDevitt ..... Instruct
Richard H. Furth ..... Instruct

Schedules:

oseph D. Brogan.....Supervisor of Schedules
ohn J. Barry.....Schedule Maker
oseph Guidi.....Schedule Maker
arle A. Rambo.....Schedule Maker

Accounting:

eo. S. Warren.....Assistant Director of Accounts
eo. C. Quinn.....Senior Accountant
elvin F. Kraut.....Accountant
ulon E. Stevenson.....Accountant
orothy E. Johnson.....Cashier
aul W. Frasher.....Head Clerk, Revenues
erlin L. Henry.....Head Clerk, Timekeeping
emo M. DeLuca.....Senior Clerk, Timekeeping
ohn J. Lyons.....Chief Clerk, Stores and Purchasing
arl B. Southard.....Head Clerk, Stores and Purchasing
aymond H. Farrell.....Statistical Clerk

Personnel and Safety:

aul J. Fanning.....Director, Bureau of Personnel and Safety
ames Finn.....Personnel Assistant
Vm. D. Ratto.....Asst. Chief Instructor Training and Safety
ichard Griffin.....Instructor Training and Safety
artin Wormuth.....Instructor Training and Safety
deline Svendsen.....Editor, Trolley Topics

Claims:

onald Mazzoni.....General Claims Agent
lfred P. Felder.....Chief Clerk, Claims Bureau
eter F. Beasley.....Senior Claims Investigator
aurice P. Murphy.....Senior Claims Investigator

Equipment and Power:

Vm. C. Bendel.....General Supt. of Equipment and Power
has. D. Miller.....Superintendent of Equipment
rederick E. Cook.....Superintendent of Motive Power
ictor C. Peterson.....Superintendent of Garage
rank J. Doyle.....Superintendent of Cable Machinery
avid P. Whelan.....General Foreman, Overhead Lines
ames M. Leslie.....Senior Clerk, Shops-Equipment

Track and Roadway:

rank J. Sheehan.....General Supt., Maintenance of Way Engineering
(Retired January 1, 1948)
ohn H. Ryan.....General Supt., Maintenance of Way Engineering
Vm. B. Bushnell.....Senior Civil Engineer
rnest Von Husen.....Assistant Engineer
ennis J. Kennealy.....Senior Clerk, Track and Roadway

adio Control System and Headway Recorder:

During the past year, the two new facilities which were inaugurated in the fiscal ear 1946-1947, designed to speed up schedules and to control and improve service, ere continued in operation. One is a two-way radio installation with transmitter cated on Twin Peaks. This installation provides contact with two-way radio-quipped automobiles. The other is a headway recorder system, electrically ecording headways.

Both installations are operated from a central control room at the Geary Street car house.

Central Control, with radio station KCRJ and twenty-nine mobile units, was inaugurated on January 6, 1947.

The following is a statement of messages transmitted by radio for the period July 1, 1947, to June 30, 1948:

RADIO MESSAGES TRANSMITTED

1947	Monthly Total	Daily Averages
July	6,703	216
August	6,858	221
September	6,874	229
October	7,326	236
November	6,647	222
December	7,183	232
1948		
January	7,194	232
February	6,928	239
March	7,426	240
April	6,644	221
May	7,326	236
June	7,213	240
Total	84,322	230

Central Control is equipped with headway recorders to handle forty locations two contactors at each location to record cars traveling in both directions. On account of the substitution of street car operation by motor coach operation on lines No. 3, 4, 5, 6, 7, 21 and 22, the present number of locations at which headway recorders are operated is thirty. The ten presently unused locations will be restored to use when trolley coach operation is inaugurated.

In June, 1947, a radio receiver with a fixed frequency tuned to police radio station KGPD was installed, enabling the operators of Central Control to be informed of fires and accidents which may affect the street car lines or coach routes of the railway.

The Central Control office is in operation daily from 6:00 a.m. to 1:30 a.m. during which time the operator in charge of the headway recorders receives and answers all calls for information relative to the operation of the railway. All such calls are routed from the main telephone switchboard direct to the headway recorder desk.

Reports of all operators of Central Control are made daily and forwarded to the various department heads and to the General Manager. A file of all reports is maintained in the Central Control office.

All operations of Central Control, including radio, headway recorder, and information desk, are performed by a staff of four men who are under the supervision of Mr. Hobart G. Wilson, Chief Inspector.

POTRERO PITS
Trolley Coaches are checked at the new pits of the Potrero Trolley Coach Base.

Motor Coach Garage and Yard Facilities:

During the year to June 7, 1948, all motor coach operations were centralized at the motor coach garage at Twenty-fourth and Utah Streets. A considerable quantity of new repair and maintenance facilities have been provided at this location since the date of consolidation, September 29, 1944, but the greatly increased motor coach operation, as evidenced by the forty-eight motor coach routes operated, covering 413 round-trip route miles operated by 367 motor coaches, made it necessary to provide additional yard and service facilities.

On June 7, 1948, the old McAllister Street division was utilized to house and service motor coaches, and on August 1, 1948, the new Ocean motor coach division was placed in service with such facilities as were then constructed.

As of November 1, 1948, of the 449 motor coaches in operation in the railway the number being housed and serviced at the three bus divisions were as follows:

24th and Utah Division	187
Ocean Division	132
McAllister Division	130
Total	449

All major repairs are still being made at the Twenty-fourth and Utah division.

MONEY ROOM
Tokens are counted in the new, super safe money room.

Fares:

On account of the greatly increased cost of operation, including wage increase the necessity of providing the service charges for bond interest and redemption the 1947 Rehabilitation and Refinancing bond issues, and the decline in passeng revenue, it is estimated that the railway will require funds to the extent $2,798,456 in the fiscal year 1948-1949 from sources other than railway revenu

Of this amount, $293,723 is to be provided from current railway surplus $728,030 from Use Tax monies, and $1,776,703 from ad valorem tax monies.

In view of the above, after full discussion and consideration, and of the ina visability of effecting reduced operating costs through service cuts, the Pub Utilities Commission by resolution No. 9310 approved an increase in the railw fare structure to a straight 10 cent fare, eliminating the 8⅓ cent token rate, increase in the charge for school ticket rides from 3⅓ cents to 5 cents, an increa in the fare on the No. 40 San Mateo line from 25 cents to 30 cents, and an increa in chartered car and coach rates.

It should be noted that an increase in fares was granted effective July 17, 19 to the privately owned California Street Cable Railroad operating in San Fra cisco from the 10 cent cash or 8⅓ cent token rate to a straight 10 cent fare.

While it might require as much as a 12 cent fare to fully provide funds for

the railway's cost of operation and bond service charges, it was decided to approve at this time the rate structure above mentioned.

According to a legal opinion, the rate increase would require the approval of eight members of the Board of Supervisors to become effective.

Early in November, 1948, the Board of Supervisors acted on this fare increase, and it failed to secure the necessary eight votes for approval.

Subsequently on November 8, 1948, the Public Utilities Commission resolved by resolution No. 9369 not to press further at this time for an increase in the fare structure.

Financial Notes on Operation Fiscal Year Ended June 30, 1948:

Gross operating revenues for the fiscal year totaled $18,321,582 as compared with $19,038,756 in the previous year, a decrease of $717,174, or 3.77 per cent.

This decrease reflects the general decline in revenue being experienced by transit companies throughout the nation and the necessity for many fare rate increases being made or sought.

Miscellaneous non-operating income totaled $49,849, principally interest received on bank balances and amounts received for salvaged materials and the sale of retired equipment.

Comments on Operating Expenses and Other Charges:

OPERATING EXPENSE

Operating expenses, not including provisions for depreciation and accidents, totaled $17,076,471, as compared with $16,526,518, an increase of $549,953 over the previous year.

Wage increases in the year ended June 30, 1948, including the platform wage increase from $1.24 to $1.368 per hour, added over $1,000,000 to the railway costs for the year, and mandatory increased employee pension costs to the railway increased over $500,000 over the previous year.

Materials, supplies and services likewise increased in cost over the previous year.

Taking the above items into consideration, of which pension and wage costs increase alone amount to over $1,500,000, the fact that the overall operating expense of the railway for the past fiscal year increased but $549,953 indicates that operating economies effected, including substitution of motor coach for street car operation, accounted for a saving of over $1,000,000.

INTEREST PAID

Interest charges for the year, exclusive of interest on the 1947 rehabilitation bonds, totaled $95,453, a decrease of $22,351 under the previous year.

TAXES

Taxes paid on land in San Mateo County amounted to $17,553, an increase of $3,437.

PROVISION FOR DEPRECIATION

The amount of $1,087,841 charged to income for a Provision for Depreciation was determined in accordance with the provisions of Sections 119.1 and 128 of the Charter. This amount was arrived at by the application of certain basic rates and

lives of properties as established by engineers and accountants. The amoun charged for the year exceeded the amount charged in the previous year by $14,004

PROVISION FOR ACCIDENTS

The amount charged to income and credited to the "Accident Reserve" durin the year was $1,361,856.

Inasmuch as the "Reserve for Accidents" on June 30, 1947, had accumulated t the amount of $2,366,318, which amount is deemed sufficient to provide for curren outstanding accident payments and costs, it was decided to keep the accident re serve at this figure by charging income and crediting the reserve in the fiscal yea ended June 30, 1948, with the exact amount of all accident payments and cost for the year.

The amount charged to income in the previous year was $1,889,002 representin 10 per cent of the gross passenger revenue, and $527,145 in excess of the amoun charged to income in the year ended June 30, 1948.

RETIREMENT CHARGES

Plant and equipment based on historical cost in the case of original Municipa Railway properties, and of appraised original cost in the case of acquired Marke Street Railway properties, was retired during the year in an amount totalin $2,917,352. Of this amount $2,527,666 represents acquired Market Street Railwa properties and $389,686 represents original Municipal Railway properties.

This large figure is a result of the extension rehabilitation program now unde way and consequent retirement of tracks, paving, and equipment being replace or abandoned.

During the year, the old acquired Market Street Railway Company Haigh Street Car House and land site were sold for the amount of $53,500, resulting i a profit of $26,089.

In the previous fiscal year, original Municipal Railway property, consisting c two parcels of land at Jones and Jefferson Streets and one parcel of land at Forty eighth Avenue and Taraval Street, was sold for a total amount of $139,300, resul ing in a profit of $81,218.

After taking into account credit for the profit realized on the land sales abov mentioned in the respective years, a loss on retirements developed, which amour was charged to income as follows:

Loss through retirements—Fiscal Year 1947-1948	$240,093
Loss through retirements—Fiscal Year 1946-1947	3,795

NET LOSS

The net loss for the fiscal year ended June 30, 1948, after provision for acc dents, depreciation, and retirements charges, amounts to $1,507,837, as compare with $531,150 in the previous year, an increased net loss of $976,687.

In considering this net loss, account must be taken of the items of increase wage and salary costs and increased employee retirement cost which amounted over $1,500,000, of the charge for loss due to retirements of $240,232, and higher material, supplies and service costs encountered during the year.

The decrease in operating revenue of $717,174 under the previous year is also major factor to be considered.

By types of operation for the year, electric street car operation resulted in a loss of $325,049, cable car operation resulted in a loss of $150,444, motor coach operation resulted in a loss of $1,098,429, and trolley coach operation showed a profit of $66,085, the combined system loss being $1,507,837.

Payments on Funded Debt:

During the year, the railway from current funds redeemed the amount of $100,000 of the original 1913 Municipal Railway bond issue and paid the amount of $52,948.75 to the Market Street Railway Company on the purchase of their operating properties. The balance due the Market Street Railway Company of $1,881,398.71 was paid on May 7, 1948, from the 1947 Refinancing Bond Fund.

At the close of the year, the outstanding bonded debt was as follows:

Municipal Railway (Issue of 1913)	$500,000
Market Street Railway Refinancing (Issue of 1947)	1,950,000
Municipal Railway Rehabilitation (Issue of 1947)	6,500,000
Total	$8,950,000

Depreciation:

The provision for depreciation for the year charged to operations was determined in accordance with the provisions of Sections 119.1 and 128 of the Charter and amounted to $1,087,841.45. Of this amount, $491,490.52 is applicable to the original Municipal Railway properties and properties purchased subsequent to acquiring of the Market Street Railway Company's properties on September 29, 1944, and the amount of $596,350.93 is applicable to the properties acquired from the Market Street Railway Company.

The amount of $491,490.52 applicable to original Municipal Railway properties and properties purchased subsequent to September 29, 1944, was determined by applying certain basic rates and lives of properties as established by engineers and accountants to the cost of said properties as of June 30, 1947. This amount is 3.719 per cent of the cost of road and equipment as of that date. See Schedule II of this report for details.

The amount of $596,350.93 applicable to the properties acquired from the Market Street Railway Company was determined from an appraisal and valuation of said properties made by the Bureau of Engineering of the Public Utilities Commission. This valuation detailed all properties acquired, giving historical costs, estimated lives of properties, expired and remaining lives of same, accrued depreciation to date of acquisition, September 29, 1944, and an annual provision to be made for depreciation.

A summary of the figures, after reflecting retirements to June 30, 1946, is as follows:

Historical Cost	$30,803,371.92
Depreciable Cost	28,141,664.14
Accrued Depreciation	23,468,890.30
Annual Depreciation	824,531.89

Of the above annual depreciation figure of $824,531.89, the amount of $228,180.96 was charged against a deferred credit account entitled "Excess of Appraised Valuation over Purchase Cost," in accordance with the procedure

THE FLEET'S IN
Citizens inspect some of new White Coaches bought out of bond issue.

established by the accounting firm which made the independent audit in the fiscal year 1944-1945, the year of acquisition of the Market Street Railway Company's properties.

The balance of $596,350.93 was charged against operations on the Income Statement. See Schedule II-A of this report for details.

The indebtedness against the consolidated Municipal Railway properties at June 30, 1948, consists of $500,000 outstanding on the Municipal Railway bond issue of 1913, $1,950,000 on the 1947 Market Street Railway Refinancing Bonds, and $6,500,000 on the 1947 Municipal Railway Rehabilitation Bonds.

A statement showing the bonds authorized and sold will be found in this report under Schedule III.

Auditing and Accounting:

The accounts of the Municipal Railway are maintained in accordance with the forms and requirements of the California State Public Utilities Commission in so far as these are applicable to publicly owned and operated utilities and also in accordance with Section 64 of the Charter of the City and County of San Francisco.

The centralized control system installed by the Controller has been merged

with these accounts with the result that no obligation may be incurred without prior certification of the Controller that funds are available to discharge said obligation when it becomes due.

The cash balances of the Municipal Railway funds were verified in the Treasurer's office as of June 30, 1948, and with the exception of settlements for injuries and damages provision has been made for all ascertained liabilities outstanding as of June 30, 1948.

The accounts and activities of the Municipal Railway are audited currently by the Municipal Railway auditing staff, and frequent audits on various phases of the railway operations are made by the Controller's office force. As provided in ordinance 9.0621, an annual audit of the department is made as of June 30, by a firm of certified public accountants. The accountant's report not having been completed at the time of compilation of this department's report, there may be minor differences between the two reports on account of reclassifications and adjustments made by the accountants.

The burden of work encountered by the accounting force of the railway during the year continued extremely heavy, the problems attendant upon the consolidation and rehabilitation being factors.

The large volume of purchases of materials and supplies required by the railway, the heavy issuance of stores in connection with maintenance and rehabilitation work, and the great volume of accounting work pertaining to financial and operating matters were also factors in the difficulties encountered. The increasing availability of more experienced clerical help greatly aided in the accomplishment of the required accounting work.

Each of approximately 13,000 stock items of stores, the total value of which is in excess of $900,000, has been given a code number which designates the part number, object of expenditure number, and storage warehouse location. A perpetual inventory is maintained, giving current inventories and unit values, at each storage warehouse location.

Tabulating Machine Installation:

The modern tabulating machine equipment installation, installed in the previous fiscal year, was modified in the past year to include only those certain functions which were found to be adapted to the use of this equipment.

Among the functions to be performed by this tabulating machine installation are the distribution by account and code number of stores issues, the compilation by individual motor and trolley coaches and by coach routes of mileage statistics, gasoline and oil consumption, the maintenance of personnel records, giving pertinent data concerning over 3,600 employees, and the current compilation of a large volume of statistical information for use in connection with the preparation of the annual budget.

It is contemplated to make further use of this tabulating machine equipment on such work as experience shows advantageous to assign to it.

Thirty-five and One-half Years' Operation:

The Municipal Railway on June 30, 1948, had completed thirty-five and one-half years of operation, the past three and three-quarters years being consolidated operation with the acquired properties of the former Market Street Railway Company. Elsewhere in this report will be found mention of the purchase.

RAILWAY CELEBRATES
The Municipal Railway Drum and Bugle Corps leads parade of new buses.

The total income from the start of operations on December 28, 1912, to June 30, 1948, amounted to $182,973,546, which included $5,481,000 received from sale of 1913 bond issue, $1,855,494 from the sale of the 1947 Rehabilitation bond issue, $1,950,000 from the 1947 Refinancing bond issue, $16,663 accrued interest and premium on the 1947 Refinancing and Rehabilitation bond issues, $2,291,406 contributed, $705,920 interest on bonds owned and on daily cash balances, $70,230 received as a subsidy from the State Board of Harbor Commissioners, and $370,601 miscellaneous profit and loss items. Passenger revenue and other revenue totaled $170,232,232.

The total expenditures other than capital expenditures from the start of operations on December 28, 1912, to June 30, 1948, were $150,263,182, of which operating expenses amounted to $137,525,040, bond interest charges $4,655,162, interest during acquisition $397,159, payments for injuries and damages $7,233,817, taxes $54,447, retirement charges $243,888, and miscellaneous profit and loss charges $153,669.

The net profit from operations in the thirty-five and one-half years of operation totals $5,470,880. This amount, plus the amount of $2,291,406 contributed, $1,855,494 from the 1947 Rehabilitation Bond Fund, less $38,271 interest on the 1947 Rehabilitation bonds makes a total surplus of $9,579,509 as of June 30, 1948.

Bonds totaling $4,981,000 were retired out of a total of $5,481,000 issued in

ONE OF TEN
The first of ten new streamlined streetcars is examined by railway officials.

1913. Redemption of the 1947 Refinancing and Rehabilitation bond issues are discussed elsewhere in this report.

Capital expenditures for road and equipment purchased amounted to $27,031,611, $5,481,000 of which was derived from monies received from the 1913 bond issue, $1,855,494 from the 1947 Rehabilitation bond issue, $15,452,003 paid from or to be paid from earnings and contributions, and $4,243,114 from the Reconstruction and Replacement Fund.

Road and equipment retired based on cost totaled $3,360,957, of which $2,466,664 was charged to the depreciation reserve, and $894,293 charged to operating expense or salvaged. This leaves a balance of road and equipment on hand and in use, based on cost as of June 30, 1948, in the amount of $23,670,654.

On June 30, 1948, net cash, receivables and stores on hand, after deducting all liabilities with the exception of $4,305,494 outstanding bonds for Plant in Service, resulted in net free assets in the amount of $1,575,383. This compares with net free assets of $3,426,533 shown on June 30, 1947, a decrease of $1,851,150.

During the thirty-five and one-half years of operation, the Municipal Railway carried 3,767,220,592 pasengers. Passenger coach and car miles operated totaled 381,376,562, and car and coach hours operated totaled 40,163,054.

Expenses Per Car Hour Mileage and Hours Operated:

Operating expense per car hour, not including reserves for depreciation and accidents or interest charges, was $6.34 for electric street cars, $7.26 for cable cars, $4.15 for motor coaches, and $3.41 for trolley coaches. Like figures for the previous year were $5.67 for electric street cars, $6.56 for cable cars, $3.86 for motor coaches, and $3.31 for trolley coaches.

Total expense per car hour, including all charges, was $7.27 for electric street cars, $8.48 for cable cars, $4.78 for motor coaches, and $4.15 for trolley coaches. Like charges for the previous year were $6.77 for electric street cars, $7.50 for cable cars, $4.51 for motor coaches, and $4.09 for trolley coaches.

System costs per hour for all types of operation were $5.43 for operating expense and $6.25 for all charges. The previous year showed $5.06 for operating expense and $6.01 for all charges.

The total mileage operated by Municipal Railway cars and coaches during the year was 29,066,859, as compared with 30,063,299 miles in the previous year, a decrease of 996,440, or 3.31 per cent. Electric street cars operated 15,530,556 miles, cable cars 436,424 miles, motor coaches 11,767,885 miles, and trolley coaches 1,331,994 miles. As compared with the mileage operated in the previous year, electric street car mileage operated decreased 2,775,885 miles, cable car mileage decreased 21,738 miles, motor coaches increased 1,355,197 miles, and trolley coaches increased 445,986 miles.

Car and coach hours operated totaled 3,143,524 for the year as compared with 3,263,950 in the previous year, a decrease of 120,426 hours, or 3.69 per cent.

Electric street cars operated 1,768,879 hours, cable cars 81,992 hours, motor coaches 1,149,117 hours, and trolley coaches 143,536 hours. As compared with the previous year, electric street car hours operated decreased 309,855 hours, cable car hours decreased 2,042 hours, motor coaches increased 141,492 hours, and trolley coaches increased 49,979 hours.

Change from Street Car to Motor and Trolley Coach Operation:

To illustrate the change taking place from street car to coach operation, the following statement has been prepared, comparing the miles and hours operated in the month of August, 1948, with the month of August, 1947:

MUNICIPAL RAILWAY OF SAN FRANCISCO
COMPARATIVE STATEMENT OF MILES AND HOURS OPERATED
August, 1948, and August, 1947

	August 1948		August 1947		
	Miles	Percent of Total	Miles	Percent of Total	Increase *Decrease*
Miles Operated:					
Electric Street Cars	1,011,786	39.54	1,383,144	56.15	*371,358*
Cable Street Cars	37,139	1.45	36,941	1.50	198
Motor Coaches	1,386,721	54.20	934,007	37.92	452,714
Trolley Coaches	123,058	4.81	109,189	4.43	13,869
System Total	2,558,704	100.00	2,463,281	100.00	95,423

Hours Operated:					
Electric Street Cars.....	113,150	40.85	155,718	58.90	*42,568*
Cable Street Cars.....	6,956	2.51	6,915	2.62	41
Motor Coaches	143,755	51.90	89,997	34.04	53,758
Trolley Coaches	13,124	4.74	11,746	4.44	1,378
System Total	276,985	100.00	264,376	100.00	12,609

Italic figures denote loss and deficiency.

Passengers Carried:

The total passengers carried on cars and coaches during the year were 307,975,046 as compared with 314,623,064 in 1946-1947, 326,007,393 in 1945-1946, 295,306,166 in 1944-1945, and 167,348,356 in 1943-1944. A like figure for the pre-war year 1940-1941, before consolidation with the Market Street Railway Company, was 108,822,011.

Total passengers carried during the year by types of service were 203,258,635 on electric street cars, 9,893,350 on cable cars, 83,885,668 on motor coaches, and 10,937,393 on trolley coaches.

These figures on total passengers carried, as compared with the previous year, represent a decrease of 21,986,009 for electric street cars, an increase of 654,306 for cable cars, an increase of 10,733,524 for motor coaches, and an increase of 3,950,161 for trolley coaches.

Revenue passengers carried during the year by cars and coaches totaled 216,788,454 as compared with 224,003,684 in the previous year, a decrease of 7,215,230.

Revenue passengers carried by types of service for the year were 149,769,936 for electric street cars, 6,508,077 for cable cars, 52,614,792 for motor coaches, and 7,895,649 for trolley coaches. As compared with the previous year, electric street cars showed a decrease of 18,395,459, cable cars an increase of 581,863, motor coaches an increase of 7,707,986, and trolley coaches an increase of 2,890,380.

Passenger Receipts:

Owing to the consolidation and to changes in the rates of fare from 5 cents to 7 cents on September 29, 1944, and from 7 cents to 10 cents cash, or 8⅓ cents token rate on May 20, 1946, financial and operating figures for the past year as compared with the previous year and prior years will show abnormal differences and will not reflect a true picture of the street railway transportation business of the city.

The rate of fare of 10 cents cash or 8⅓ cents token rate placed in effect on May 20, 1946, remained unchanged during the entire past year.

Passenger revenue for the year amounted to $18,171,522, as compared with the previous year's figure of $18,890,017, a decrease of $718,495, or 3.80 per cent. The record passenger receipts for a single day occurred on December 31, 1947, and amounted to $61,338.87. A comparison of the daily average passenger receipts for the past four fiscal years is given below:

DAILY AVERAGE PASSENGER RECEIPTS

	1947-1948 1947	1946-1947 1946	1945-1946 1945	1944-1945 1944
July	50,106	52,153	48,526	18,680
August	50,137	52,769	47,850	19,589
September	50,867	52,876	46,542	19,812
October	51,376	54,747	48,274	48,908
November	49,183	52,253	46,010	47,483
December	50,407	52,110	44,409	46,781
Daily Average—July to December	50,349	52,832	46,942	19,360* 47,724†

	1948	1947	1946	1945
January	48,387	50,506	45,174	46,004
February	46,888	51,700	44,723	47,649
March	49,654	51,316	46,116	48,385
April	48,733	53,000	47,333	48,455
May	47,496	50,987	49,831‡	49,476
June	49,897	49,688	55,874	51,137
Daily Average—January to June	48,518	51,190	48,152	48,518
Daily Average—July 1 to June 30	49,439	52,011	47,540	48,253¶

*Average July 1 to September 28, 1944.
†Average September 29 to December 31, 1944.
‡Average September 29 to June 30, 1945.
¶Rate of Fare increased from 7c to 10c cash, or 8⅓c token rate on May 20, 1946.

Cash passenger receipts per hour operated for the past year were $6.95 for electric street cars as compared with $6.70 in 1946-1947, $6.14 in 1945-1946, $6.17 in 1944-1945, $5.58 in 1943-1944, $5.06 in 1942-1943, and $4.33 in 1941-1942.

For cable cars the like figure per hour was $6.62 as compared with $5.89 in 1946-1947, $5.20 in 1945-1946, and $6.23 in 1944-1945, no other previous years' comparisons being available.

The motor coach figures were $3.74 per hour as compared with $3.66 in 1946-1947, $3.20 per hour in 1945-1946, $3.16 per hour in 1944-1945, $2.71 in 1943-1944, $2.22 in 1942-1943, and $1.78 in 1941-1942.

Trolley coaches showed $4.49 per hour as compared with $4.44 in 1946-1947, $4.40 in 1945-1946, $4.86 in 1944-1945, $4.86 in 1943-1944, $4.13 in 1942-1943, and $3.30 in 1941-1942.

The gross receipts from all sources per hour operated for cars and coaches combined were $5.84 in the year 1947-1948, $5.85 in 1946-1947, $5.43 in 1945-1946, $5.65 in 1944-1945, $5.26 in 1943-1944, $4.73 in 1942-1943, and $4.02 in 1941-1942.

In reviewing all the above figures on receipts per hour, consideration must be given to the fare rates existing in respective years.

A comparative statement, detailing revenues by months in both fiscal years, follows.

MUNICIPAL RAILWAY OF SAN FRANCISCO
COMPARISON OF GROSS OPERATING REVENUE
Fiscal Years 1947-1948 and 1946-1947

1947	1947-1948	1946-1947 1946*	Increase or *Decrease*	Percent
July	$1,564,414.03	$1,474,914.71	$89,499.32	6.07
August	1,574,032.35	1,657,646.61	*83,614.26*	*5.04*
September	1,541,814.40	1,597,113.03	*55,298.63*	*3.46*
October	1,611,416.78	1,710,286.18	*98,869.40*	*5.78*
November	1,482,863.63	1,585,479.20	*102,615.57*	*6.47*
December	1,586,230.73	1,640,248.43	*54,017.70*	*3.29*
July to December	$9,360,771.92	$9,665,688.16	*$304,916.24*	*3.15*
1948		1947		
January	$1,512,391.28	$1,580,534.00	*$68,142.72*	*4.31*
February	1,379,322.33	1,460,860.86	*81,538.53*	*5.58*
March	1,565,283.85	1,611,410.70	*46,126.85*	*2.86*
April	1,478,162.38	1,600,869.51	*122,707.13*	*7.67*
May	1,492,104.08	1,598,043.20	*105,939.12*	*6.63*
June	1,533,546.07	1,521,349.10	12,196.97	.80
January to June	$8,960,809.99	$9,373,067.37	*$412,257.38*	*4.40*
Total	$18,321,581.91	$19,038,755.53	*$717,173.62*	*3.77*

*July 1, 2 and 3, 1946—No operation account of strike.

Italic figures denote loss and deficiency.

Maintenance of Track and Roadway:

Two major jobs of track construction and reconstruction were performed during the year by private contractors. These were the reconstruction of the inner tracks on Market Street from Eddy Street to Valencia Street, and the construction of tracks from Stockton Street, across Market Street to Fourth Street.

With the exception of the above, track reconstruction was confined to urgent minor jobs essential to the operation of the railway.

Expenditures for track and paving repairs under maintenance for the year totaled $711,653, which total included cost of removals of abandoned track by Municipal Railway forces at miscellaneous locations, which amounted to $46,701.39. The amount expended for replacements of crossings, special work, tracks, paving, and minor new construction totaled $539,462, which costs included

ALL-IN-ONE TRUCK
New railway truck will lift streetcar, take pole out of ground or pull out crossing.

amounts expended on the Market Street inner tracks and on the Stockton Street extension across Market Street to Fourth Street. The total amount expended for track work during the year was $1,251,115.

Under maintenance and minor replacements during the year, 13,794 lineal feet of track were reconstructed, and 117,090 square feet of concrete paving base seven inches deep were placed. Asphalt paving renewed totaled 771,724 square feet at a total cost of $141,386.

In the thermit welding process of repairing broken rails, welds totaling 1,389 were made under general maintenance.

Track repairs were made at 655 locations.

The above figures do not include the work performed on the following jobs:

Contract No. 292—Replacement Job No. 1646M-3 and Bond Fund Job No. 3001—Market Street, Eddy to Valencia Street, and Contract No. 270—E & B Job No. 260—Stockton Street Extension to Fourth Street.

Quantities of work performed on these two jobs were as follows:

Asphalt paving on concrete base	159,372 sq. ft.
Asphalt conform paving	82,032 sq. ft.
Single track construction	13,919 lin. ft.
Thermit welds made	419

TIRED OUT
The tired old McAllister Street (No. 5) trolleys gave way to bus operation in June.

The above mentioned track work does not include the removal of tracks on streets on which street car lines have been abandoned. Such removals are being performed by the Department of Public Works and the costs are chargeable to the 1947 Street Improvement Bond Fund.

A complete summary of all track removals, replacement, construction, extension and betterment, and maintenance jobs performed during the year is given in the following pages of this report.

Track Removals:

The program of track removal and repaving of streets on street car lines abandoned or to be replaced by motor or trolley coach operation, was well under way at the close of the fiscal year.

Track removals made by the Municipal Railway during the fiscal year were as follows:

All trackage within the limits of the Fort Mason Military Reservation.

All trackage on the right of way across Golden Gate Park.

MARKET STREET "HOLE"
"That hole" on Market Street attracted much attention. It was dug to install crossover from Stockton to Fourth.

Track removals and street surface restoration were also made by the Department of Public Works under the 1947 Street Improvement Bond Fund as follows:

Polk Street, from Post Street to North Point Street.

Kearny Street, from Market Street to Broadway.

Sansome Street, from Bush Street to Chestnut Street.

Folsom Street, from Third Street to Steuart Street.

Steuart Street, from Folsom Street to Howard Street.

Howard Street, from Steuart Street to the Embarcadero.

Folsom Street tracks on the Embarcadero.

Sacramento Street, from Van Ness Avenue to the Embarcadero.

Maintenance Jobs:

Various small maintenance jobs were performed during the year, and the cost of same charged to operations. A considerable number of these jobs concerned the removal of abandoned track and facilities, as noted in the following statement:

STATEMENT OF EXPENDITURES FOR MAINTENANCE JOBS

Amount expended 1946-1947—Maintenance Jobs in Progress July 1, 1947	$4,340.57
Amount expended 1947-1948—Maintenance Jobs	54,840.47
Total	$59,181.04

A summarization of the work performed making up this total is as follows:

Track Repairs and Reconstruction	$6,553.18
Track Removals	34,331.01
Overhead, Poles and Feeders, Repairs and Reconstruction	4,132.28
Overhead, Poles and Feeders, Cost of Removals	9,290.63
Dismantling Retired Cars and Equipment	4,656.19
Building Repairs	217.75
Total	$59,181.04

New Construction and Additions:

Thirty forty-four passenger motor coaches were purchased from the railway operating fund at a cost of $481,502.90.

Twenty-four forty-passenger trolley coaches were purchased from the railway operating fund at a cost of $464,270.55.

Under extension and betterment job No. 260, the tracks on Stockton Street were extended across Market Street and connected with those on Fourth Street at a total cost of $88,422.83.

Under extension and betterment job No. 273, headway recorder devices were purchased and installed at an incomplete cost of $26,707.20.

Under extension and betterment job No. 275, additional offices, including a new central money room, were constructed in the Geary Street car house, which construction tended to relieve overcrowded conditions, at a total cost of $146,995.04.

Under extension and betterment job No. 280, new construction of overhead, poles and facilities in connection with the "E" line conversion to trolley coach operation was performed at a total cost of $381,095.19.

Under extension and betterment job No. 284, six hydraulic bus lifts were purchased and installed at the 24th Street Garage, at a total cost of $29,120.28.

A complete statement of additions, extensions and betterments follows.

STATEMENT OF EXPENDITURES FROM OPERATING FUND OR CONTRIBUTED FOR ADDITIONS, BETTERMENTS AND NEW CONSTRUCTION

Amount expended 1939-1940—Extension and Betterment, and Construction Jobs in Progress, July 1, 1947	$369.28
Amount expended 1942-1943—Extension and Betterment, and Construction Jobs in Progress, July 1, 1947	2,989.01
Amount expended 1943-1944—Extension and Betterment, and Construction Jobs in Progress, July 1, 1947	1,070.36
Amount expended 1944-1945—Extension and Betterment, and Construction Jobs in Progress, July 1, 1947	4,531.12
Amount expended 1945-1946—Extension and Betterment, and Construction Jobs in Progress, July 1, 1947	57,163.89
Amount expended 1946-1947—Extension and Betterment, and Construction Jobs in Progress, July 1, 1947	595,768.91
Amount expended 1947-1948—Extension and Betterment, and Construction Jobs, and Direct Charges to Road and Equipment	1,213,790.63
Total	$1,875,683.20

A summarization of the work performed and equipment purchased making up this total is as follows:

Buildings, Shops and Garages	$185,100.70
Land Purchase—Block bounded by Beach, North Point, Stockton and Powell Streets	184,123.37
Convenience and Waiting Stations	3,063.17
Track Construction	95,089.64
Line "E"—Poles, Overhead and Facilities	129,942.09
Track Signals and Lights	3,346.05
Radio and Headway Recorder Installation	27,572.58
Underground Feeders	742.09
Fare Box Reconstruction	4,685.88
Forty Trolley Coaches	719,877.60
One Traction Motor	1,602.07
Thirty Motor Coaches (44-Passenger)	481,502.90
Tools for 10 Twin Coaches	2,000.00
One G.M.C. Motor Coach Engine	2,860.96
Miscellaneous Track and Roadway Equipment	3,091.20
Miscellaneous Shop Equipment	9,648.11
Miscellaneous Garage Equipment	1,767.38
Miscellaneous Furniture and Office Equipment	11,153.72
Metal Tokens	8,513.69
Total	$1,875,683.20

Reconstruction and Replacements:

The only major replacement job during the fiscal year 1947-1948 was the reconstruction of the inner tracks on Market Street from Eddy Street to Valencia Street, performed under Replacement Job No. 1646M-3 and Bond Fund Job No. 3001. The incomplete cost to June 30, 1948, was $313,744.81, of which $48,744.81 was provided from the Reconstruction and Replacement Fund and $265,000.00 from the 1947 Rehabilitation Bond Fund.

A complete statement of all replacement jobs performed during the year plus jobs in progress at the beginning of the year follows:

STATEMENT OF EXPENDITURES FOR RECONSTRUCTION AND REPLACEMENTS

Amount expended 1944-1945—Replacement Jobs in Progress July 1, 1947	$10,340.06
Amount expended 1945-1946—Replacement Jobs in Progress July 1, 1947	41,049.66
Amount expended 1946-1947—Replacement Jobs in Progress July 1, 1947	327,348.12
Amount expended 1947-1948—Reconstruction and Replacement Fund, Exhibit "C"	269,692.74
Turn in value received on Replacement Jobs 1947-1948	67,504.04
Amount expended 1947-1948 Operating Fund Replacements	77,950.02
	$793,884.64
Less charged to Operating Expense and Accounts Receivable	1,689.65
Net Charge to Capital Accounts	$792,194.99

A summarization of expenditures for reconstruction and replacements totaling $792,194.99 is as follows:

Track Reconstruction and Replacements	$338,122.91
Paving Replacements	106,663.02
Line "E" Trolley Coach Conversion	44,657.06
Overhead and Pole Replacements	3,157.77
Buildings, Shops, Garages, and Equipment; Replacements and Reconstruction	97,314.32
Street Cars—Replacements (Partial Cost)	2,701.48
Fare Boxes—Reconstruction	82,552.85
Office Machines—Replacements	7,324.96
Service Trucks and Automobiles—Replacements	11,082.12
Engineering Plans and Studies in Connection with Construction, Reconstruction and Replacements	98,618.50
Total	$792,194.99

GOING UP!
One of Railway's growing fleet of trolley coaches proves it can climb city's steep hills.

Capital Expenditures from the 1947 Rehabilitation Bond Fund Transferred to Plant in Service:

One hundred fifteen motor coaches purchased from 1947 bond funds were placed in service as of June 30, 1948 at a cost of $1,855,493.95.

In another section of this report will be found details of allocations for equipment and transit facilities totaling $11,400,000 which is the amount of bonds sold to October 31, 1948, from the $20,000,000, 1947 Rehabilitation Bond Fund.

Considerable construction and equipment purchases were in progress as of June 30, 1948, but in accordance with the policy established only such items as are actually placed in service are being transferred to Plant in Service.

Maintenance of Equipment:

During the fiscal year 1947-1948, the equipment of the original Municipal Railway cars was maintained in excellent condition, and the equipment on cars purchased from the Market Street Railway Company was further improved to the extent that this equipment is now in fair operating condition.

The usual policy of cleaning cars daily and disinfecting weekly was maintained throughout the year.

NERVE CENTER
Scores of wires and power lines are arranged for burial under Stockton Street at Market.

For both the Municipal Railway and the Market Street Railway Company equipment, 81 car bodies were overhauled and painted. One hundred and eight cars were rewheeled, and 3,227 motors were repaired, while 2,652 pieces of electrical control apparatus and 92 truck units were overhauled. A total of 503 propulsion armatures and 101 air compressor armatures were rewound for cars of both systems.

During the year, 81 electric cars, 90 motor coaches, 3 trolley coaches, 5 trucks, 6 automobiles, 1 motorcycle, and 3 miscellaneous electric cars were repainted. One hundred and forty-eight electric cars damaged in accidents, as well as 14 trolley coaches, 142 motor coaches, and 40 cable cars, also damaged in accidents, were touched up, while 47 electric car fronts were repainted.

Painting was done at Geary Street, at Seventeenth Street, at the Twenty-fourth Street garage, and at the Elkton shops. Miscellaneous painting was done on waiting stations and telephone boxes.

The brass foundry turned out 116,534 pounds of castings for the thousands of castings that were made.

The mill ran 74,481 feet of lumber, and the special machine shop made and repaired 14,091 track tools. Rail was cut into 3,065 pieces and fitted and fabricated for various special work.

TRACK REMOVAL
A machine rips up portion of outside track on Market Street.

Several pieces of machine tools were added to the machine shop during the year. These tools were obtained from the War Surplus Administration.

The machine shop, in addition to repairing and manufacturing a great number of parts for street cars, buses and trolley coaches, made 183 new axles and 129 new armature shafts, and fitted axles to 1,448 car wheels.

The fare box department serviced and repaired 6,087 fare boxes and converted 136 manual boxes to electric boxes for new trackless trolleys and buses.

The car building department repaired 148 street cars, 111 motor coaches, and 11 trolley coaches, and manufactured thousands of various parts for all types of rolling stock and other departments.

The fender repair shop repaired 3,488 fenders, and 20 cars of the original Municipal Railway lines were equipped with new type of life guard fenders.

The McAllister Street car house was discontinued for electric cars and is now operating as a bus depot.

Twenty-four trolley coaches were received and assigned to the Seventeenth Street car house for use on the No. 33 and "E" lines. One hundred and forty-five new motor coaches were also received.

Forty-six electric street cars, 11 cable cars, and 31 motor coaches were disposed of through public sale.

Many changes were made at the Elkton yard during the year due to the construction of the Ocean Avenue garage on this property.

Forty cars at Seventeenth Street were equipped with new window wipers, while the 43-A type cars were equipped with window wipers, conductor valves, emergency valves, and mechanical reversers.

Safety devices were installed on the elevator at the Washington and Mason car house.

The signal tower was removed from Spear and Market Streets, and the gilley room at the Geneva car house was reconstructed.

To add to the efficiency of this and other departments, a heavy duty wrecker equipped with power hoists was purchased.

A new leather mat was purchased for the Forest Hill elevator, and the waiting station at Twenty-sixth and Van Ness Avenue South was removed and installed on the San Mateo line at Buri-Buri. Building repairs were made and glazing was done during the year as required.

The railway is covered with fire insurance on the acquired Market Street Railway Company's street cars, miscellaneous buildings and plant, and on all motor coaches, trolley coaches and automobiles owned by the railway. During the year, billing was made to insurance carriers for fire damage as follows:

BILLINGS FOR FIRE DAMAGE

July 1, 1947, to June 30, 1948

Date of Fire	Equipment Damaged	Billing for Damage
7/20/47	Motor Coach No. 075	$1,373.00
8/18/47	Street Car No. 1244	1,806.05
11/22/47	Chevrolet Sedan No. 0045	143.36
4/14/48*	Motor Coach No. 151	90.00
6/30/48†	Motor Coach No. 316	1,341.76
	Total	$4,754.16

*Billed 1948-1949 Paid 1948-1949
†Billed 1948-1949 Unpaid

All prior bills adjusted and paid as of June 30, 1948.

Garage Maintenance:

Following is a general summary of work pertaining to motor coach maintenance and garage improvements from July 1, 1947, to June 30, 1948:

UNITS RECONDITIONED AND INSTALLED

During the year, the following units were thoroughly reconditioned in the unit repair department at the Twenty-fourth Street garage and subsequently installed on serviceable motor coaches:

Air compressors	219
Carburetors	540
Clutch assemblies	612

Cylinder head assemblies	153
Differential assemblies	109
Distributors	1,365
Engines—G.M.C.	16
Hall-Scott	10
White	53
Miscellaneous	12
By G.M.C. Co.	43
Fuel pumps	360
Generators	271
Generator Regulators	421
Miscellaneous air units (relays, regulators, governors, wipers and valves, safety valves, shutters, cylinders, etc.)	673
Miscellaneous door controls (interlock switches, control valves, master switches, relays, speed controls, sensitive edges, alarm bells, etc.)	543
Miscellaneous brake controls (slack adjusters, master valves, etc.)	698
Miscellaneous electrical units (stop lite switch, ignition and wiring harness, starter solenoids, choke and shut-off solenoids, horns, switches, buzzers, shift relays and solenoids, transmission hi-low switches, shift governors, etc.)	606
Miscellaneous engine controls (slave and throttle master valves, governors, alarmastats and senders, governor throttle assembles, defumers, etc.)	214
Starters	373
Steer gear assemblies	19
Steer knuckles	102
Transmissions	240
Water pumps	142

MINOR REPAIRS

Minor general repair jobs, unit installations, and adjustments approximating 30,000 were performed as noted on garage daily work register. In this summary, work such as following is included:

Brake sets relined, including machining and grinding drums in most instances	826
Clutches reconditioned	576
Engines semi-overhauled	66
Valve sets reconditioned	110
Springs changed	211

STORAGE BATTERIES

Supplementing daily service, the following quantities were assembled as new units or repaired. Many components are manufactured on premises. The repair work generally consists of renewing cell connectors, posts, covers, straps, terminals or cables.

	16 volt	12 volt	6 volt
Constructed	1	167	9
Re-Insulate	3	32	—
Repair	13	201	25
Renew case	—	21	9
Dismantled	—	194	52

COACH SERVICE ACTIVITIES

Service pit operations including regularly scheduled inspection and lubrication consisted of:

Nightly safety inspection	76,372
Daily minor inspection	1,945
Daily major inspection	1,917

Supplementing regular daily sweeping, glass cleaning, disinfecting, upholstery renovating and chassis steam cleaning, the following work was performed on the wash rack:

Exterior body wash	18,661 units
Interior body wash	8,086 units

There were approximately 400 accidents wherein motor coaches were damaged to some degree. In the body shop of the Twenty-fourth Street garage, 234 units were accordingly repaired or rehabilitated. To assist in this type of work, 9 vehicles were sent to foreign shops during the early part of the year. Included in this work was the complete rehabilitation of 19 coaches which had been leased from the United States Navy and subsequently returned.

GARAGE IMPROVEMENTS

Major physical improvements to the Twenty-fourth Street garage incorporate:

1. Completion of M. R. Contract No. 278. This work has provided suitable concrete paving over most of the floor area; six additional twin-post hydraulic bus lifts to facilitate repair operations; additional wall illumination; development of new work pit including removal of hazardous make-shift old pits.

2. Completion of M. R. Contract No. 288, providing increased coach servicing facilities in general. Concrete pavement surrounding individual fuel and oil dispensing islands has materially improved this area, and construction of fireproof vault housing modern fuel pumps has accelerated work flow of servicing.

3. Ventilation and heating of unit repair department has been improved by additional partition construction.

4. Receipt of long ordered steel parts bins has furnished orderly space for proper functioning of stock control.

5. Removal of all hazardous old ceiling lights and wiring followed by installation of new fixtures properly wired has been of tremendous importance in general illumination and safety.

6. Procurement of additional miscellaneous tools and equipment with development of specialized work areas has been necessary.

On June 7, 1948, motor coach operation was inaugurated from the McAllister division. Temporary facilities, providing a minimum of service and repair accommodation, were installed for the purpose. The plan followed was necessitated by the temporary nature of this divisional motor coach operation. At this writing, the first stage of the Ocean bus division development is nearing completion. Presently congested parking and service facilities at Twenty-fourth Street should accordingly be greatly alleviated. The expansion program under way will ultimately provide essential storage, service, inspection, repair and maintenance facilities long desired.

NEW MOTOR COACHES

During the period incorporated in this report, 145 new coaches were received. These are model 798 Whites with seating capacity for 44 passengers. Although basically the units are similar in construction to previous vehicles received of this type which have given satisfactory service, they differ in the method of transmitting engine power. This unit is patented as the White Hydro-Torque Drive. It furnishes a modern and highly developed means of transmitting power through a combined mechanism consisting of a hydraulic torque converter, a hydraulic coupling and a two-speed syncromesh transmission controlled by an arrangement of governors providing full automatic shifting. Among the many advantages is the freeing of the operators' hands for other duties, and for safer, more efficient operation of the coach.

Cable Machinery Department:

The activities of the cable machinery department for the year ended June 30, 1948, are detailed as follows:

The operating time of the cable machinery department on week days is from 5:58 a.m. to 1:30 a.m., and on Sundays and holidays from 6:19 a.m. to 1:30 a.m.

At the conclusion of the day, the night operating engineers on duty clean motor contacts and magnets on switchboard, inspect cable winder gears and bolts, check motor gears and compound, and help on maintenance and installation of cables. Transformers are cleaned and blown out once a month, and steam boiler tubes are cleaned on every cable installation. The day operating engineers on duty check bearing shaft temperatures, lubricate machinery, and keep records. Maintenance, installation of new cables, and removal of old is done after the close of operation.

Removal and installation of cables during the year ended June 30, 1948, are as follows:

Powell Street Line—Removed old cable No. 992 on August 6, 1947. In service 92 days. Worn out. Installed new cable No. 993 on August 6, 1947.

Jackson Street Line—Removed old cable No. 973 on August 19, 1947. In service 254 days. Worn out. Installed new cable No. 985 on August 19, 1947.

Mason Street Line—Removed old cable No. 990 on October 8, 1947. In service 131 days. Worn out. Installed new cable No. 997 on October 8, 1947.

Powell Street Line—Removed old cable No. 993 on November 6, 1947. In service 92 days. Worn out. Installed new cable No. 999 on November 6, 1947.

Mason Street Line—Removed old cable No. 997 on January 2, 1948. In service 86 days. Worn out. Installed new cable No. 1000 on January 2, 1948.

Powell Street Line—Removed old cable No. 999 on January 13, 1948. In service 68 days. Worn out. Installed new cable No. 1001 on January 13, 1948.

Powell Street Line—Removed old cable No. 1001 on April 10, 1948. In service 88 days. Worn out. Installed new cable No. 1004 on April 10, 1948.

Mason Street Line—Removed old cable No. 1000 on April 21, 1948. In service 110 days. Worn out. Installed new cable No. 1003 on April 21, 1948.

Jackson Street Line—Removed old cable No. 985 on April 29, 1948. In service 254 days. Worn out. Installed new cable No. 998 on April 29, 1948.

Powell Street Line—Removed old cable No. 1004 on June 26, 1948. In service 77 days. Worn out. Installed new cable No. 1006 on June 26, 1948.

NEW SECTIONS AND STRANDS

Jackson Street Cable:

1 section	285 feet long	July 22, 1947
1 strand	30 feet long	September 30, 1947
1 strand	35 feet long	December 11, 1947
1 strand	40 feet long	February 3, 1948

MAJOR SHUTDOWNS

1947—December 11, 1947. One hour forty-seven minutes. Bad kink. Jackson Street cable only.

1948—None to June 30, 1948.

BUMPERS HIT

Powell Street Line	46
Jackson Street Line	44
Mason Street Line	11

NEW LAGGING ON WINDERS

July 17, 1947—Installed new lagging on Jackson Street winder. Old lagging in service 827 days (worn out).

October 11, 1947—Installed new lagging on Mason Street winder. Old lagging in service 259 days (worn out).

October 28, 1947—Installed new lagging on Powell Street winder. Old lagging in service 215 days (worn out).

WORK AFTER CLOSE OF OPERATIONS

Fiscal Year 1947-1948

During the year, necessary maintenance work on pulleys, sheaves, cable winders, the Powell Street turn-table and miscellaneous facilities was required to be performed by repair crews after close of operations on 23 different days.

Likewise, after close of operations, repair crews were required to make repairs to cables, such as cutting out old splices, resplicing, drawing tucks, straightening, and miscellaneous work on 110 different days.

GRIP BUILDING AND MAINTENANCE

Grips repaired and re-died	2,190
New grips built	74

3,000 grip dies and 148 grip shanks were champered.

DAILY MAINTENANCE

The daily maintenance of underground machinery consists of the inspection and lubrication of 14 tail sheaves, 20 stationary pulleys, 46 depression beams, 91 Crown pulleys, 200 curve pulleys, and 823 carrying pulleys.

Inspection and overhauling of bumper bars and bells at eight locations are made once a week.

Cable machinery shop does the machine work on cast iron carrying pulleys, brass bearings, bushings, steel forgings and grip parts.

Maintenance of Overhead Line:

The following items are exclusive of the regular extensive overhead and underground maintenance, tree trimming, office, tunnel, car house and car yard lighting, semi-annual checking of utilities easements on poles and buildings, making of steel bracket and arm gains, beams for pole setting and extending, welding and dressing of worn overhead, signal recorder and switch parts, rebuilding of signals and switches, repairing of fire, telephone circuits, repairing auto towers and hoists, complete checking of underground plant and feeders and servicing 2,245 emergency calls.

Plant transferred to poles and eyebolts	311 cases
Joint poles applied for	15 poles
Steel poles substituted for decayed or wrecked wood poles	90 poles
Wood poles substituted for decayed poles	41 poles
Steel or concrete poles removed	165 poles
Steel or concrete poles repaired	40 poles
Wood poles removed	58 poles
Poles painted	158 poles
Steel poles extended	68 poles
Pole castings repaired	18 cases
Sound for badly worn trolley wire	2 miles
Phone boxes installed or moved	2 locations
Compressor hose and "hot loop" and lights installed for track department	47 locations
Underground rail bonding installed	14 locations
Cement sidewalks repaired	148 locations
Block signals made modern	2
Skip-stop staffs and signs installed or moved	20 locations
Sectionalizing switch boxes attended	2
Picture taking	11 cases

SPECIAL ITEMS

Stockton and Market overhead curves rebuilt for new track work.

Making up recorder and trolley coach parts.

Rewiring crossovers at Market and Mason—3 times.

Overhead plant removed on Union, Kearny, Broadway, Powell, Folsom—Third to Mission terminal, McAllister yard, Army Street, Golden Gate Park Right-of-way, Divisadero, Fort Mason.

Drainage pump installed at Sutro car house pits.

Lighting installations at Potrero offices, Geneva office building, McAllister, Mason, Potrero and Twenty-fourth car houses and garages.

Replacing coach plant on Seventeenth Street removed for sewer construction.

Taking out temporary overhead branchoffs on the Union Street coach construction.

Poles moved for street work on Presidio Avenue and California Street.

Heater and lights installed at Elkton yard office.

Radio installing in two cars.

Removed temporary underground plant and strain poles at Seventeenth and Mission.

Rerouted feeder from Guerrero Street to Eighteenth Street due to underground on Guerrero Street.

Moving coach plant on South Van Ness for better curb service between Ninth and Fourteenth Streets.

Rerouting heavy feeders on California Street—Presidio Avenue west.

Rearranging and installing special electrical control for hoists at Twenty-fourth Street garage.

Two additional block signals installed in Twin Peaks tunnel.

Installing new type signal at Powell and O'Farrell.

Ninth and Judah station "N" connected to feeders for Ninth Avenue, Judah and Parnassus.

Special portable lighting equipment made up for track work on cable lines.

Rearranged overhead and pole plant on Geneva Avenue from Alemany Boulevard and Mission Street.

Twentieth Avenue pole plant removed.

Build 50 feet steel antenna pole for Department of Electricity and deliver same at Twin Peaks location.

Manufactured 16 insulated rail joints for 4-inch rail.

Moved inner trolley wires on Market Street over and back to clear high tools used in track removal between Eddy and Valencia Streets.

Trolley coach plant rerouted from South Van Ness—Twenty-sixth and Army Street to Twenty-sixth Mission and Twenty-fifth Streets.

Stringing additional negative feeders on Twentieth Avenue.

Installing lighting at Buri-Buri station on suburban line.

Much temporary overhead and feeder work on Geary between Presidio and Masonic—track rerouting.

Setting temporary poles on Masonic near Geary.

Lowering and replacing overhead and feeder plant on suburban line at Aqua so contractor's overpass could be removed.

Crossarms installed and feeder strung—Van Ness Avenue to Laguna Street on Chestnut Street.

Correcting infractions on Union Street's feeder trolley coach construction.

Rebuilding feeder plant at Forty-eighth and Geary.

Constructed saw and cut 10,900 pounds castings for ornamental poles on Market Street.

Stripped electrical equipment from rail bending plant at Mariposa.

Short type casting substituted for standard pole castings on Valencia Street.

Installing standard railway crossing signal at Baden.

Elkton yard—rearranged feeder, signal, fire alarm, phone plants, moving poles for coach yard construction.

Motive Power Department:

From July 1, 1947, to June 30, 1948, the total power consumption of Municipal Railway substations, including Mason and Washington cable station, was 65,640,110 kwh. In addition to this, during the same period, power purchased for operation of the original Municipal Railway division totaled 39,764,981 kwh. Also purchased was 1,430,691 kwh for use in car houses, shops and tunnels. The total consumption for the consolidated system during the year was 106,835,782 kwh.

In addition to maintaining records of Demand and Watthour meter readings for compiling power consumption, and operation and maintenance of equipment distributed in six substations and one cable station (consisting of fourteen Synchronous Motor Generator sets, two induction Motor Generator sets, six Rotary Converters, two cable driving motors and their auxiliaries and control equipment) the following work was completed:

Semi-annual overhauling of ninety-six 600 volt D.C. automatic circuit breakers on generators and trolley feeders.

Semi-annual changing of insulating oil and overhauling of contacts and remote control operating mechanism of twenty-two 15,000 volt automatic oil circuit breakers and twenty-two 11,000 volt oilbreak switches used for operating the converting apparatus and on starting compensators.

Annual overhauling and cleaning of thirty 15,000 volt automatic oil circuit breakers used on high tension lines supplying the substations.

Overhauled contacts and changed oil on fifteen circuit breakers which had repeatedly relayed and spilled oil due to heavy short circuits and other disturbances on the 11,000 volt distributing network.

Resurfaced by grinding the commutators on Generators Nos. 4, 5 and 6 at Turk Street substation, Nos. 2 and 4 at Bryant Street station, No. 3 at Geneva station, and commutators on Rotary Converter No. 2 at Downtown substation and No. 3 at Eighth Avenue station. The substitution of carbon brushes with a different grade and manufacturer proved unsatisfactory and necessitated most of the resurfacing of the commutators mentioned.

Resoldered loose risers on commutators of M. G. Nos. 4 and 6 at Turk Street station, No. 4 at Bryant station and No. 3 at Geneva station. Overhauled bearings on No. 1 blower and motor at Eighth Avenue station.

Extended and installed two new hose connections on compressed air line in basement of Millbrae substation.

Replaced burnt-out resistance unit of D. C. low voltage relay on Generator No. 2 at Bryant Street station.

Monthly overhauling of contacts on step-by-step voltage regulators on high-tension side of transformers on Converters Nos. 1, 2 and 3 at Downtown station, and Converter No. 3 at Eighth Avenue station.

Repaired broken rod for counterweight on air damper of transformer on Converter No. 1 at Downtown station.

Installed Bristol Recording voltmeters on 600 volt D.C. bus at Geneva, Millbrae and Eighth Avenue substations.

Changed conduit and rewired 115 volt station service at Turk Street substation.

Repaired broken hinge straps on trap door under No. 2 Blower at Downtown station.

On December 4, 1947, a breakdown occurred on the 2,150 hp. synchronous motor of Motor Generator No. 3 at Turk Street substation which required the partial dismantling of the 11,000 volt stator winding to replace two shorted armature coils.

Installed fiber shims under loose field coils on the 2,150 hp. motor of M. G. No. 2 at Bryant Street station.

Cleaned and oiled 20-ton chain-operated overhead travelling crane and welded damaged chain wheel; also cleaned and oiled hoist on 10-ton crane (both located at Turk Street substation).

Undercut mica on the commutators of exciters on all thirteen 1,500 kw Motor Generator sets in daily use.

Repaired damaged A.C. overload relay on M. G. No. 2 at Bryant station.

Checked station Voltmeters of all stations with portable standard.

Checked individual cells for voltage and gravity of control bus batteries in all stations.

Assisted in repairs, when on January 30, 1948, two 15,000 volt Potential Transformers on 11 kv line No. 14 shorted and damaged disconnecting switches and cables at Bryant Street substation. Repairs made and apparatus replaced by P. G. & E. Co.

Resurfaced by grinding the A. C. collector rings on Rotary Converter No. 1 at Downtown substation.

Realigned and tightened slip rings which had worked loose on the 750 hp. cable driving motor at Mason and Washington cable station; also renewed worn-out carbon contacts of current limiting relay on the 440 volt A. C. motor control board.

Repaired wiring of ammeter and replaced circuit breaker alarm switches on feeder panels Nos. 2 and 3 at Geneva substation which were damaged by a heavy short circuit on Feeder No. 1902 on March 21, 1948.

Installed telephone relay for extension bell and signal light on private telephone line to Millbrae station, at Geneva substation.

Repaired magnetic field coil of astatic ammeter on Generator No. 3 at Geneva station.

Assisted P. G. & E. Co. in repairing damage done by the breakdown of current transformers on 11,000 volt cable No. 71 at Turk Street station, which required the replacement of current transformers, 15,000 disc. switches, insulators, and connecting cables.

Transferred insulating oil from settling to storage tanks at Turk and Bryant streets stations.

Repaired burnt connecting strips on starting winding of Converter No. 3 at Eighth Avenue station.

Painted supports for switchboards and live 600 volt D.C. bus and circuit breakers at Downtown and Eighth Avenue stations.

Installed 2,000 volt condensers to shunt ground indicating lamps on all M. G. sets at Bryant Street station as a safety measure.

Repainted with Glyptal lacquer the string bands on edge of commutators on all M. G. sets and Rotary Converters.

Tightened U bolts on equalizing windings of Converter No. 1 at Eighth Avenue station.

Repaired burnt-out 125 volt D. C. telephone extension bell at Downtown substation.

Replaced the wooden boards and worn mats in front of switchboards at Turk,

Geneva, Millbrae stations, and Mason and Washington cable station with new rubber floor mats.

Performed monthly cleaning of insulators on the 11,000 volt bus and disconnecting switches which is done after stations are shut down. Therefore, in the station which carries the owl load normally, arrangements must be made with the P. G. & E. Co. so the load can be transferred to other stations and the high tension lines opened.

On June 5, 1948, potential transformers on line No. 51-52 broke down and will be replaced by new transformers. Wiring has been temporarily transferred to other lines.

Made up and replaced worn-out cam on step-by-step voltage regulator on transformers of converter No. 3 at Eighth Avenue station.

The following work was done by the equipment department during the year:

Repairs to wooden ventilators at Millbrae station; painted metal frames on glass roof, also doors, window frames, office walls, etc., at Downtown station; replaced broken window panes at Turk, Bryant and Geneva stations; repaired glass roof at Downtown station; installed screens on windows and put hinges on windows in doors to improve ventilation at Geneva station; began painting doors and window frames, etc., at Bryant station; installed toe boards on oil-switch galleries at Bryant and Geneva stations.

Employees:

The total number of employees as of June 30, 1948, was 3,628. Of this number, 2,464 were platform employees, 579 shop employees, 206 track employees, and 379 office and supervisory employees.

As of June 30, 1947, the railway had 4,106 employees on its payrolls, of which number 2,894 were platform employees. This is a reduction of 430 platform employees, or 478 in total employees.

The conversion from two-man street car to one-man coach operation accounts for the major portion of this decrease.

During the year terminations were as follows: platform 1,855, shop 331, track 137, office and supervisory 138. The total terminated was 2,461.

New employees hired were: platform 1,425, shop 293, track 125, office and supervisory 140. The total number hired was 1,983.

Platform men retiring through the retirement system amounted to 43. Of this number 22 were for age, 19 for service, and 2 for disability.

Close cooperation between the railway and the Civil Service Commission has resulted in instituting certain refinements in the selection and employment of platform applicants whereby there is more assurance of securing transit employees who are better qualified to cope with the increasing, hazardous traffic problems particular to San Francisco and its growing population.

The training of street car and coach operators by the training department showed a decrease in the volume of new employees trained as compared with the previous year owing to the decrease in the number of platform men hired during the fiscal year. A total of 936 new motormen, conductors and coach operators were processed and given work assignments. In addition to this number, there were 134 trainees who, for various reasons, failed to complete their training.

Toward the latter part of the fiscal year, 216 regular, certified employees were given training on motor and trolley coaches. This program will be accelerated in the future in order to keep pace with the reconversion program whereby coach operators are secured from the present ranks of motormen and conductors.

In addition to the work of training platform employees, a continuous program of following up and observing both new and old employees is a necessary function of the training department.

During the year, contacts were made on 25,647 occasions, 5,644 being with conductors, 14,052 with motormen, and 5,951 with coach operators. The primary purposes in following up employees are twofold—safety and public relations.

COMPARISON OF NUMBER OF EMPLOYEES
June 30, 1948, with June 30, 1947
and
EMPLOYMENTS, TERMINATIONS AND EMPLOYEES TRAINED IN FISCAL YEAR ENDED JUNE 30, 1948

	Car and Coach Operators	Shop	Track	Office and Supervisory	Total
Total Employees—June 30, 1948	2,464	579	206	379	3,628
Total Employees—June 30, 1947	2,894	617	218	377	4,106
Increase or Decrease	*430*	*38*	*12*	2	*478*
Employments during Fiscal Year	1,425	293	125	140	1,983
Terminations during Fiscal Year	1,855	331	137	138	2,461
Increase or Decrease	*430*	*38*	*12*	2	*478*

	Motormen	Conductors	Motor Coach Operators	Trolley Coach Operators	Total
Employees completing training—Fiscal Year	355	361	220	..	936
Employees failing to complete training—Fiscal Year	68	24	42	..	134
Motormen and Conductors transferring to Coach Operators	...	...	194	22	216
Follow-ups—Additional Instruction: Number of Contacts	14,052	5,644	5,156	795	25,647

Italic figures denote loss and deficiency.

Accident Prevention:

Improved selection, training, and supervision, as well as the personnel and equipment factor, have had a tremendous influence on the steady decline of accidents. While mileage operated, which can be considered as a basis of exposure, has been fairly constant for the past several years, showing only a 3 per cent decrease under the previous fiscal year, passenger and traffic accidents have decreased 17 per cent over the same period.

Of the total accidents reported for the year, many are of a minor nature. Stress has been placed upon the operating personnel to report any incident of an unusual nature irrespective of whether or not the railway is involved. Therefore a great number of the accidents listed in the 1947-1948 report relate to accident reports which are actually miscellaneous occurrences but included nevertheless in the total number of accidents.

The total number of traffic accidents for the fiscal year was 5,907, which is a reduction of 1,488, or 19 per cent under the previous year. Passenger accidents totaled 3,159, which is also a reduction of 356, or 10 per cent.

Other accidents which include damaged wearing apparel, faintings, employee accidents, broken windows, and unusual occurrence reports amounted to 1,472 for the fiscal year, a reduction of 423, or 22 per cent under the previous year.

The total number of accidents, including employee accidents, occurring during the year, amounted to 11,502, as compared with 13,869 in the previous year, a decrease of 2,367, or 17 per cent.

A further substantial decrease in accidents is anticipated as the program of conversion from street car to coach operation progresses and as the riding public becomes more familiar with the new coach operation.

The reduction in the number of accidents by the railway compares very favorably with the accident reductions in other transit organizations throughout the nation despite the fact that exposure has increased through widespread use of motor vehicles.

Outstanding innovations and improvements of existing procedures during the fiscal year are summed up as follows:

1. The creation of an accident committee which has resulted in a more thorough investigation into the causes of accidents. Recommendations are made relative to the disciplinary measures that should be followed where negligence is shown or where violations of safety rules occur.

2. Standardization of written reports and controlled distribution, thereby eliminating duplication of work.

3. Closer cooperation between the retirement board and the railway management relative to the physical qualifications pertaining to employees currently employed.

4. A thorough analysis of statistical information, particularly accident records, with a view of determining proper correctional procedures.

5. Contemplated institution of an award program based on the fact that incentive creates a more satisfied employee and thereby establishes closer labor-management relationship.

6. Fostered submission of suggestions pertaining to matters of personnel and safety and recognition given for any sound ideas submitted.

7. Closer liaison between the railway and the Civil Service Commission which controls the re-entry of former unsatisfactory employees.

This program has effected a definite saving in the selection, training, and supervision of employees and accident costs.

Bureau of Claims:

Accident occurrences during the year ended June 30, 1948, showed a decrease of 2,367, or 17.07 per cent under the year 1946-1947, and a decrease of 4,625, or 28.68 per cent under 1945-1946.

The measures taken to decrease the number of accident occurrences and the plans to effect further decreases is covered in a separate section of this report entitled "Accident Prevention."

The General Claims Agent as a member of the railway Accident Prevention Committee participates in the work of formulating measures to reduce accident occurrences.

Noted below is a tabulation of accident occurrences and total accident costs for the past three fiscal years.

Year	Accident Occurrences	Total Payments and Costs
July 1, 1945, to June 30, 1946	16,127	$1,051,996.34
July 1, 1946, to June 30, 1947	13,869	1,531,548.16
July 1, 1947, to June 30, 1948	11,502	1,361,856.30

The amount of accident payments and costs for the past fiscal year of $1,361,-856.30 shows a decrease of $169,691.86 under the previous fiscal year, or 11.08 per cent.

The amount expended during the year provided for the disposition of a considerable number of old accident cases, the allocation of costs to the years in which the accidents occurred being as follows:

Fiscal Year	Amount
1947-48*	$564,123.40
1946-47	317,961.75
1945-46	323,458.22
Prior Years	156,312.93
Total	$1,361,856.30

*The amount allocated to the year 1947-48 includes salaries of the Bureau of Claims and of the City Attorney's office, amounting to $220,461.95, and the amount of $60,147.73, premium on an Excess Liability Insurance policy.

As a measure of protection against the liability for large accident payments, arising from a single accident, the railway carries insurance coverage in the form of an "Excess Public Liability and Property Damage" policy. This policy affords protection for the excess cost of any single accident occurrence over $37,500 and up to $500,000 and does not limit the number of occurrences.

In the fiscal year 1947-1948, the amount of reimbursement received by the railway from the insurance carrier amounted to $102,367.29.

Since the date of taking out this coverage on May 1, 1945, to September 30, 1948, the premiums paid and accrued on this policy have amounted to $120,336, while the amounts paid by the insurance carriers in connection with railway accidents have totaled $252,336.

The insurance carrier has a further liability for payments on accidents occurring during the policy periods which have not as yet been settled.

The General Claims Agent of the railway has attended and presided as chairman at conferences of the claims section of the American Transit Association where, to their mutual benefit, claims agents of member transit companies discuss the most effective and equitable methods of handling the large volume of claims that arise through accidents.

Constant studies are made relative to accident claims, and particular attention is given to the maintenance of harmonious public relations.

Conference proceedings disclosed the fact that the railway claims policies are fully abreast of modern practices, and in some respects set a pace.

During the year, the railway reported 1,265 accident cases to the claims bureau index division of the Association of Casualty and Surety Companies of which association it is a member.

This division is operated for the purpose of accumulating records of personal injury claims and disseminating such information to subscribing companies.

This association is a non-profit organization, the cost of operation being pro rated among its subscribers.

The railway has received much valuable information from this source particularly as to habitual claimants and repeaters.

The annual report of the Bureau of Claims containing statistics pertinent to claims and accident costs follows:

MUNICIPAL RAILWAY OF SAN FRANCISCO
ANNUAL REPORT OF BUREAU OF CLAIMS
Fiscal Year Ended June 30, 1948

Number of Accidents, Total	11,502
Number of Personal Injury Accidents (included in above)	3,411
Number of Fatal Accidents* (included in above)	(14)
Number of Employee Accidents (included in above)	964
Number of Passengers Carried	307,975,046
Accidents per 100,000 Passengers	3.735
Personal Injuries per 100,000 Passengers	1.108
Fatalities per 100,000 Passengers	.005
Car Miles Operated	29,066,859
Passengers Carried per Mile Operated	10.60
Accidents per 100,000 Car Miles	39.57
Personal Injuries per 100,000 Car Miles	11.74
Fatalities per 100,000 Car Miles	.05
Claims Presented	3,386
Claims Adjusted (including suits)	2,935
Suits Filed	330
Suits Disposed of	334
Suits Pending	671
Per Cent Claims Presented to Accidents	29.44
Per Cent Settlements to Accidents	25.52
Per Cent Settlements to Claims Presented	86.68
Total Operating Revenue	$18,321,581.91

	Gross Expenditures	Credits from Excess Liability Carrier	Net Expenditures
Personal Injury Settlements	$1,014,374.34	$102,367.29	$912,007.05
Property Damage Settlements	88,597.32	.....	88,597.32
Salaries and Wages†	220,461.95	.....	220,461.95
Miscellaneous and Hospital Expense	80,642.25	.....	80,642.25
Excess Liability Accident Insurance	60,147.73	.....	60,147.73
	$1,464,223.59	$102,367.29	

Total Expenditures—Claims Department	$1,361,856.30
Ratio Expenditures to Operating Revenue	.07433
Personal Injury Cost per 1,000 Passengers	$2.96
Personal Injury Cost per 1,000 Car Miles	$31.38
Total Expenditures Cost per 1,000 Passengers	$4.42
Total Expenditures Cost per 1,000 Car Miles	$46.85

*Parenthetical number of deaths noted (14) are reported in some other classification of accidents.
†Salaries and wages account includes expenses of the City Attorney's Office amounting to $95,740.00 for the year.

SUMMARY OF TYPES OF ACCIDENTS
COMPARISON OF ACCIDENTS OCCURRING DURING FISCAL YEAR ENDED JUNE 30, 1948
with
Fiscal Year Ended June 30, 1947

	Electric Car		Trolley Coach		Motor Coach		Cable Car		Total	
	1947-8	1946-7	1947-8	1946-7	1947-8	1946-7	1947-8	1946-7	1947-8	1946-7
TRAFFIC ACCIDENTS										
Collision with Persons	166	272	16	8	64	67	6	7	252	354
*Deaths	(12)	(18)	(0)	(0)	(1)	(11)	(1)	(3)	(14)	(32)
Collision with Own Coaches and/or Cars	117	187	1	3	28	32	5	9	151	231
Collision with Other Motor Vehicles	3,302	4,577	273	245	1,379	1,331	371	444	5,325	6,597
Collision with Fixed Objects	5	8	6	4	32	25	1	9	44	46
Collision with Other Objects	24	37	3	6	26	18	1	1	54	62
Derailments—Switch Occurrences	54	63	..	..	...	...	6	8	60	71
Caught In Between Cars	21	34	..	..	...	...	..	..	21	34
Total Traffic Accidents	3,689	5,178	299	266	1,529	1,473	390	478	5,907	7,395
PASSENGER ACCIDENTS										
Boarding Moving Car or Coach	637	830	0	0	3	1	20	27	660	858
Boarding—Caught or Struck by Doors	14	6	5	5	38	30	0	0	57	41
Boarding—Trips, Slips, Stumbles, etc.	164	141	4	2	30	18	6	5	204	166
Alighting Moving Car or Coach	299	475	2	2	6	4	31	25	338	506
Alighting—Caught or Struck by Doors	6	19	14	10	84	96	0	0	104	125
Alighting—Trips, Slips, Stumbles, etc.	174	225	15	11	88	68	11	5	288	309

On Board—Thrown, Fell, Slipped	678	784	43	16	324	225	53	55	1,098	1,080
On Board—Other Injuries	320	352	18	2	57	64	15	12	410	430
Total Passenger Accidents	2,292	2,832	101	48	630	506	136	129	3,159	3,515
OTHER ACCIDENTS										
Wearing Apparel, Fainting, Miscellaneous	556	1,149	30	26	68	180	30	46	684	1,401
Broken Windows	486	462	5	14	14	15	9	3	514	494
Unusual Occurrence Reports	177	...	10	..	66	..	21	..	274	...
Total Other Accidents	1,219	1,611	45	40	148	195	60	49	1,472	1,895
Total—Employee Accidents Excluded	7,200	9,621	445	354	2,307	2,174	586	656	10,538	12,805
EMPLOYEE ACCIDENTS										
1947-48	964	...	...	..	..	...	...	..	..	964 ....
1946-47	... 1,064	...	...	..	..	...	...	..	..	 1,064
Total Accidents	964	1,064	7,200	9,621	445	354	2,307	2,174	586	656	11,502	13,869
WITNESSES—1947-1948										
Witnesses Obtained	15,730	...	924	..	4,824	...	1,504	..	22,982	....
Witnesses per Accident Report	2.18	...	2.08	..	2.09	...	2.57	..	2.00	....

*NOTE: Number of deaths (14) noted above in parentheses are included in accidents reported in other classifications.

Collections for Damages to Railway Property:

The policy of collecting for damages to Municipal Railway property from motorists and others liable therefor was instituted on August 1, 1941. The following is a summary of collections made by fiscal years since the inception of this procedure:

Fiscal Year	Amount Collected
1941-1942 (11 months only)	$3,016.40
1942-1943	2,310.69
1943-1944	5,017.99
1944-1945	5,398.76
1945-1946	9,468.23
1946-1947	22,229.23
Sub-total—6 fiscal years	$47,441.30
1947-1948	21,769.51
Total	$69,210.81

EXHIBIT "A"
MUNICIPAL RAILWAY OF SAN FRANCISCO
BALANCE SHEET—JUNE 30,1948

Assets

FIXED CAPITAL:			
Road and Equipment:			
Municipal Railway	$15,146,867.37		
1947 Municipal Railway Bond Fund	1,855,493.95	$17,002,361.32	
Less: Reserve for Depreciation		8,749,709.57	$8,252,651.75
Market Street Extension		$28,275,706.16	
Less: Reserve for Depreciation		22,188,290.58	
		$6,087,415.58	
Less: Excess of Appraised Valuation over Purchase Cost		1,677,753.05	4,409,662.53
New Construction in Progress			331.42
			$12,662,645.70
CASH:			
On Deposit with Treasurer:			
Operating Fund			$1,926,548.33
Bond Redemption Fund			1,900.00
Bond Interest Fund			1,210.00
Reconstruction and Replacement Fund			730,610.63
Reserve for Land Purchase			250.00
Market Street Extension			1,281,821.66
1947 Municipal Railway Rehabilitation Bond Interest Fund			15,886.10
1947 Market St. Railway Refinancing Fund			5,024.80
1947 Market St. Railway Refinancing Bond Interest Fund			406.25

OTHER CASH:			
Revolving Fund		15,000.00	3,978,657.77
INTERFUND ACCOUNTS RECEIVABLE:			
Hetch Hetchy Water Supply			22.75
ACCOUNTS RECEIVABLE:			
Miscellaneous			52,520.65
INTRAFUND ACCOUNTS—SCHEDULE ANNEXED:			
Intrafund Accounts		$1,271,084.07	
1947 Municipal Railway Rehabilitation Bond Fund		16,428.44	1,287,512.51
DEFERRED CHARGES:			
Materials and Supplies		$911,372.76	
Materials and Supplies 1947 Bond Fund		13,255.81	
Replacement Jobs in Progress		55,410.62	
Suspense Debits		164,075.20	
Prepaid Expenses:			
Public Utilities Commission	$2,956.58		
Insurance	3,904.48	6,861.06	
Contract, Purchase Order, Service Order, Order for Work, etc. (Contra)			
To Outsiders	$501,683.62		
To Other City Departments	166,780.00	668,463.62	1,819,439.07
			$19,800,798.45

Liabilities

BONDED DEBT:			
Issue of Dec. 1, 1913, due 1948-52 at rate of $100,000 per year		$500,000.00	
Matured Bonds (1913 Issue)		1,900.00	
1947 Market St. Railway Refinancing		1,950,000.00	$2,451,900.00
BOND INTEREST PAYABLE:			
Accrued—Not Due:			
1913 Issue	$2,083.33		
1947 Municipal Railway Rehabilitation	54,157.29		
1947 Market St. Railway Refinancing	4,062.50	$60,303.12	
Matured Coupons Unpaid:			
1913 Issue	$1,165.00		
1910 Issue (Geary St.)	22.50		
1910 Issue (Market St.)	22.50	1,210.00	61,513.12
ACCOUNTS PAYABLE:			
Warrants Outstanding		$1,053,902.08	
General Creditors		644,502.07	
Payrolls Payable		11,948.74	
Contracts Payable		21,218.68	
Contract, Purchase Order, Service Order, Order for Work, etc. (Contra)		501,683.62	2,233,255.19
INTERFUND ACCOUNTS—SCHEDULE ANNEXED:			
(Including commitments for incompleted Work Orders, etc., of $166,780.00. See Contra)			1,320,811.96
INTRAFUND ACCOUNTS (CONTRA)			1,271,084.07

DEFERRED CREDITS:			
Accident Reserve		$2,366,318.41	
Reserve for Obsolescence in Inventory		101,908.00	
Suspense Credits		8,045.40	
Reserve for Token Liability		240,429.75	
Miscellaneous Deposits		665.46	
Reserve for Employees' Compensation Claims		165,000.00	
Premium on 1947 Market St. Railway Refinancing Bonds		358.42	2,882,725.44

Surplus

BALANCE JUNE 30, 1947:			
Contributed	$2,282,480.86		
Earned Surplus	6,978,717.21	$9,261,198.07	
CONTRIBUTED—1947-1948:			
For 1947 Municipal Railway Rehabilitation: Bond Interest	$38,271.19		
From 1947 Municipal Railway Rehabilitation Bond Fund for Road and Equipment	1,855,493.95		
Donated Equipment	8,925.00		
Addition—1947-1948		1,826,147.76	
		$11,087,345.83	
Net Deficit for Twelve Months Ended June 30, 1948		1,507,837.16	
Balance June 30, 1948			9,579,508.67
CONTINGENT LIABILITY:			
Retroactive payroll adjustments (not expected to exceed $94,000.00)			.....
			$19,800,798.45

EXHIBIT "A-1"
MUNICIPAL RAILWAY OF SAN FRANCISCO
1947 MUNICIPAL RAILWAY REHABILITATION BOND FUND
Proprietary Balance Sheet, June 30, 1948

Assets

FIXED CAPITAL IN SERVICE:			
Equipment		$1,855,493.95	$1,855,493.95
FIXED CAPITAL UNDER CONSTRUCTION:			
Equipment		$1,530,962.68	
Buildings and Yards		56,064.37	
Power Distribution Systems		7,118.27	
Improvements—Surface and Underground		196,650.79	
Land		98,578.55	

UNDISTRIBUTED CONSTRUCTION COSTS:		
Interest during Construction	13,363.89	
Legal Fees and Expenses	1,625.00	
Engineering	16,299.93	1,920,663.48
CASH ON DEPOSIT WITH TREASURER:		
1947 Municipal Railway Rehabilitation Bond Fund		4,954,181.15
CONTRACT, PURCHASE ORDER, SERVICE ORDER, ORDER FOR WORK, ETC, (CONTRA):		
To Outsiders	371,833.70	
To Other City Departments	95,500.00	467,333.70
Total Assets		$9,197,672.28

Liabilities

BONDED DEBT:		
Bonds Authorized	$20,000,000.00	
Bonds Unissued	13,500,000.00	
Bonds Outstanding		$6,500,000.00
ACCOUNTS PAYABLE:		
Warrants Outstanding	$686,603.05	
General Creditors	1,479,342.33	
Contracts, Purchase Orders, Service Orders, Orders for Work, etc. (Contra)	371,833.70	2,537,779.08
INTRAFUND ACCOUNTS PAYABLE:		
Municipal Railway Operating Fund		16,428.44
INTERFUND ACCOUNTS PAYABLE:		
Hetch Hetchy Water Supply, Power & Utilities Engineering Bureau	$5,967.15	
Commitments—Incompleted Work Orders	95,500.00	101,467.15
DEFERRED CREDITS:		
Suspense	$500.00	
Bond Premium Unamortized	3,226.42	3,726.42
SURPLUS:		
Contribution from the Municipal Railway Operating Fund: Interest during Construction		38,271.19
Total Liabilities		$9,197,672.28

EXHIBIT "B"
MUNICIPAL RAILWAY OF SAN FRANCISCO
COMPARATIVE INCOME STATEMENT TWELVE MONTHS OF FISCAL YEAR 1947-1948

	Twelve Months to June 30				Cumulative from December 28, 1912, to June 30, 1948	
	1948	%	1947	%		%
REVENUE:						
Passenger Revenue	$18,171,522.23	100.00	$18,890,016.71	100.00	$168,995,052.07	100.00
Advertising Revenue	125,415.34	....	120,607.32	....	984,267.84	....
Miscellaneous	24,644.34	....	28,131.50	....	252,912.62	....
Total Revenue	$18,321,581.91	....	$19,038,755.53	....	$170,232,232.53	....
OPERATING EXPENSES:						
I Way and Structures	$932,024.02	5.13	$990,926.02	5.25	$7,128,862.05	4.22
II Equipment	1,894,274.59	10.42	1,832,625.60	9.70	12,390,977.69	7.33
III Power	1,859,977.71	10.24	1,662,708.46	8.80	19,740,261.28	11.68
IV Conducting Transportation	10,182,450.40	56.03	10,293,497.73	54.49	85,747,512.58	50.74
VI General and Miscellaneous	2,207,744.47	12.15	1,746,760.45	9.25	12,517,425.95	7.40
Total Operating Expense	$17,076,471.19	93.97	$16,526,518.26	87.49	$137,525,039.55	81.37
PROFIT FROM OPERATIONS	$1,245,110.72	....	$2,512,237.27	....	$32,707,192.98	....
DEDUCT PROVISION FOR:						
Accidents	$1,361,856.30	7.49	$1,889,001.67	10.00	$9,600,135.46	5.68
Depreciation	1,087,841.45	5.99	1,073,837.58	5.68	13,278,603.40	7.86
Total Deductions	$2,449,697.75	13.48	$2,962,839.25	15.68	$22,878,738.86	13.54
INCOME FROM OPERATIONS	*$1,204,587.03*	....	*$450,601.98*	....	$9,828,454.12	....

NON-OPERATING INCOME:						
Income from Securities Owned	.....	....	.....	....	597,037.91	....
Interest on Bank Balance	6,537.42	....	5,257.12	....	108,882.25	....
Subsidy from Harbor Commission	.....	....	.....	....	70,229.71	....
Other Income (P & L)	43,311.53	....	49,910.00	....	370,601.25	....
Total Non-Operating Income	$49,848.95	....	$55,167.12	....	$1,146,751.12	....
GROSS INCOME	*$1,154,738.08*	....	*$395,434.86*	....	$10,975,205.24	....
DEDUCTIONS FROM GROSS INCOME:						
Interest on Funded Debt	$30,727.50	.17	$32,083.34	.17	$4,655,161.74	2.75
Interest During Acquisition	64,725.99	.36	85,721.02	.45	397,159.20	.24
Taxes	17,552.68	.09	14,116.15	.07	54,447.39	.03
Miscellaneous Debits (P & L)	.....	....	.....	....	153,669.20	.09
Total Deductions from Gross Income	$113,006.17	.62	$131,920.51	.69	$5,260,437.53	3.11
Net Income Before Retirement Charges	*$1,267,744.25*	*6.98*	*$527,355.37*	*2.79*	$5,714,767.71	3.38
Retirement Charges	240,092.91	1.32	3,794.75	.02	243,887.66	.14
NET INCOME	*$1,507,837.16*	*8.30*	*$531,150.12*	*2.81*	$5,470,880.05	3.24

Italic figures denote loss and deficiency.

SCHEDULE I

MUNICIPAL RAILWAY OF SAN FRANCISCO

SCHEDULE OF ROAD AND EQUIPMENT AS OF JUNE 30, 1948

Acct. No.	I—WAY AND STRUCTURES	Balance June 30, 1947	Additions Fiscal Year 1947-1948: Contributions from 1947 Rehab. Bond Fund	Reconstruction and Replacement Fund	Municipal Railway Operating Fund	Total	Adjustments During Fiscal Year 1947-1948	Retirements During Fiscal Year 1947-1948	Net Additions Fiscal Year 1947-1948	Balance June 30, 1948
502	Right of Way	$353,342.33	.....	.....	.....	.....	.....	.....	.....	$353,342.33
503	Other Land Used in Operations, Cars	1,058,034.72	.....	.....	.....	.....	.....	$34,000.00	*$34,000.00*	1,024,034.72
B503	Other Land Used in Operations, M.C.	239,400.00	.....	.....	$723.37	$723.37	.....	.....	723.37	240,123.37
C503	Other Land Used in Operations, C.C.	34,200.00	.....	.....	.....	.....	.....	.....	.....	34,200.00
504	Grading, Cars	2,843,770.33	.....	$49,898.56	39,024.34	88,922.90	.....	146,739.78	*57,816.88*	2,785,953.45
C504	Grading, C.C.	920.00	.....	.....	.....	.....	.....	105.70	*105.70*	814.30
505	Ballast, Cars	1,498,398.68	.....	16,560.92	1,443.90	18,004.82	.....	64,852.86	*46,848.04*	1,451,550.64
C505	Ballast, C.C.	362.00	.....	.....	.....	.....	.....	.....	.....	362.00
506	Ties, Cars	873,694.29	.....	11,551.29	1,656.96	13,208.25	.....	39,595.41	*26,387.16*	847,307.13
C506	Ties, C.C.	390.00	.....	.....	.....	.....	.....	.....	.....	390.00
507	Rails, Rail Fastenings and Joints, Cars	3,559,143.54	.....	32,405.73	7,468.46	39,874.19	.....	158,545.52	*118,671.33*	3,440,472.21
C507	Rails, Rail Fastenings and Joints, C.C.	70,054.58	.....	128.70	168.00	296.70	.....	14,809.60	*14,512.90*	55,541.68
508	Special Work, Cars	1,685,282.38	.....	19,996.29	22,456.97	42,453.26	.....	167,782.01	*125,328.75*	1,559,953.63
C508	Special Work, C.C.	74,795.00	.....	.....	.....	.....	.....	2,913.19	*2,913.19*	71,881.81
509	Underground Construction, Cars	133,038.02	.....	.....	.....	.....	.....	1,938.66	*1,938.66*	131,099.36
C509	Underground Construction, C.C.	762,885.04	.....	121.50	.....	121.50	.....	136,222.04	*136,100.54*	626,784.50
510	Track and Roadway Labor, Cars	3,084,347.32	.....	74,331.56	39,205.50	113,537.06	*$37,361.23*	122,541.84	*46,366.01*	3,037,981.31
C510	Track and Roadway Labor, C.C.	137,108.51	.....	669.60	725.23	1,394.83	.....	23,116.64	*21,721.81*	115,386.70
511	Paving, Cars	4,975,829.85	.....	146,218.81	15,066.68	161,285.49	.....	361,450.17	*200,164.68*	4,775,665.17
C511	Paving, C.C.	157,401.15	.....	2,192.10	118.49	2,310.59	.....	33,036.60	*30,726.01*	126,675.14
512	Roadway Machinery and Tools, Cars	110,601.18	.....	.....	3,091.20	3,091.20	.....	32,666.51	*29,575.31*	81,025.87
B512	Roadway Machinery and Tools, M.C.	581.00	.....	.....	.....	.....	.....	.....	.....	581.00
C512	Roadway Machinery and Tools, C.C.	465.00	.....	.....	.....	.....	.....	.....	.....	465.00
513	Tunnels	14,987.49	.....	.....	.....	.....	.....	.....	.....	14,987.49
515	Bridges, Trestles and Culverts	104,213.85	.....	.....	.....	.....	.....	2,838.00	*2,838.00*	101,375.85
516	Crossings, Fences and Signs	137,583.81	.....	.....	.....	.....	.....	60,829.00	*60,829.00*	76,754.81
517	Signal and Interlocking Apparatus, Cars	27,188.19	.....	.....	3,121.16	3,121.16	.....	8,500.82	*5,379.66*	21,808.53
C517	Signal and Interlocking Apparatus, C.C.	1,741.00	.....	.....	.....	.....	.....	.....	.....	1,741.00
518	Telephone and Telegraph Lines	24,155.96	.....	.....	26,532.38	26,532.38	.....	.....	26,532.38	50,688.34
519	Poles and Fixtures, Cars	1,241,354.07	.....	2,482.20	350.88	2,833.08	*8,449.05*	17,049.98	*22,665.95*	1,218,688.12
B519	Poles and Fixtures, M.C.	691.77	.....	.....	.....	.....	.....	.....	.....	691.77
C519	Poles and Fixtures, C.C.	3,613.00	.....	.....	.....	.....	.....	.....	.....	3,613.00
T519	Poles and Fixtures, T.C.	65,655.34	.....	102.39	16,679.99	16,782.38	8,449.05	183.98	25,047.45	90,702.79
520	Underground Conduits, Cars	369,320.06	.....	.....	.....	.....	*3,475.00*	896.15	*4,371.15*	364,948.91
T520	Underground Conduits, T.C.	.....	.....	.....	.....	.....	3,475.00	.....	3,475.00	3,475.00
521	Distribution System, Cars	2,208,641.74	.....	1,969.03	2,827.94	4,796.97	*21,525.63*	83,125.99	*99,854.65*	2,108,787.09
C521	Distribution System, C.C.	605.00	.....	.....	.....	.....	.....	.....	.....	605.00
T521	Distribution System, T.C.	131,019.10	.....	41,133.49	105,921.48	147,054.97	21,525.63	401.18	168,179.42	299,198.52
523	Shops and Car Houses, Cars	1,786,262.95	.....	16,134.93	144,231.69	160,366.62	.....	50,061.36	110,305.26	1,896,568.21
B523	Shops and Car Houses, M.C.	256,784.91	.....	70,309.04	5,808.04	76,117.08	.....	9,833.31	66,283.77	323,068.68
C523	Shops and Car Houses, C.C.	336,410.00	.....	.....	1,435.00	1,435.00	.....	.....	1,435.00	337,845.00

T523	Shops and Car Houses, T.C.	47,028.38	.....	.....	.....	.....	.....	.....	.....	47,028.38
524	Stations, Misc. Bldgs. and Structures, Cars.	166,961.00	.....	126.59	3,016.16	3,142.75	.....	3,163.27	*20.52*	166,940.48
B524	Stations, Misc. Bldgs. and Structures, M.C..	2,317.76	.....	.....	595.81	595.81	.....	.....	595.81	2,913.57
C524	Stations, Misc. Bldgs. and Structures, C.C..	123.00	.....	.....	.....	.....	.....	.....	.....	123.00
T524	Stations, Misc. Bldgs. and Structures, T.C..	2,421.60	.....	.....	7,619.85	7,619.85	.....	.....	7,619.85	10,041.45
	Total—Way and Structures	$28,583,124.90	.....	$486,332.73	$449,289.48	$935,622.21	*$37,361.23*	$1,577,199.57	*$678,938.59*	$27,904,186.31
	II—EQUIPMENT									
530	Passenger and Combination Cars, Cars	$6,639,256.04	.....	.....	.....	.....	.....	$526,740.40	*$526,740.40*	$6,112,515.64
B530	Passenger and Combination Cars, M.C.	2,898,391.00	$1,855,493.95	.....	$486,363.86	$2,341,857.81	*$9,508.00*	298,893.99	2,033,455.82	4,931,846.82
C530	Passenger and Combination Cars, C.C.	222,992.00	.....	.....	.....	.....	.....	68,014.00	*68,014.00*	154,978.00
T530	Passenger and Combination Cars, T.C.	200,335.81	.....	.....	721,479.67	721,479.67	.....	.....	721,479.67	921,815.48
530-A	Fare Boxes, Cars	69,007.00	.....	$10,437.24	36,398.29	46,835.53	*2,169.38*	66,815.90	*22,149.75*	46,857.25
B530-A	Fare Boxes, M.C.	31,762.56	.....	6,851.70	29,634.36	36,486.06	11,677.38	31,358.36	16,805.08	48,567.64
T530-A	Fare Boxes, T.C.	2,933.60	.....	1,217.44	4,875.27	6,092.71	.....	2,869.35	3,223.36	6,156.96
532-A	Service Equipment, Electric	246,313.36	.....	498.15	.....	498.15	.....	66,013.00	*65,514.85*	180,798.51
532-B	Service Equipment, Automotive	76,729.45	.....	9,462.17	1,077.00	10,539.17	.....	2,781.00	7,758.17	84,487.62
533	Electric Equipment of Cars	3,046,859.53	.....	.....	.....	.....	.....	231,276.45	*231,276.45*	2,815,583.08
T533	Electric Equipment of Trolley Coaches	42,707.53	.....	.....	.....	.....	.....	.....	.....	42,707.53
536	Shop Equipment, Cars	543,836.93	.....	355.78	14,715.80	15,071.58	.....	1,086.98	13,984.60	557,821.53
B536	Shop Equipment, M.C.	68,254.73	.....	9,113.77	26,171.51	35,285.28	.....	14,698.81	20,586.47	88,841.20
C536	Shop Equipment, C.C.	15,733.52	.....	.....	.....	.....	.....	.....	.....	15,733.52
T536	Shop Equipment, T.C.	2,167.73	.....	.....	.....	.....	.....	.....	.....	2,167.73
537	Furniture, Cars	166,059.07	.....	7,119.96	12,492.40	19,612.36	.....	6,947.18	12,665.18	178,724.25
B537	Furniture, M.C.	13,416.94	.....	.....	.....	.....	.....	.....	.....	13,416.94
C537	Furniture, C.C.	3,013.18	.....	.....	.....	.....	.....	.....	.....	3,013.18
538	Miscellaneous Equipment, Cars	88,329.86	.....	.....	8,513.69	8,513.69	.....	20,098.20	*11,584.51*	76,745.35
	Total—Equipment	$14,378,099.84	$1,855,493.95	$45,056.21	$1,341,721.85	$3,242,272.01	.....	$1,337,593.62	$1,904,678.39	$16,282,778.23
	III—POWER									
540	Sub-Station Buidings, Cars	$357,240.47	.....	.....	.....	.....	.....	.....	.....	$357,240.47
C542	Power Plant Equipment, C.C.	150,706.00	.....	.....	.....	.....	.....	.....	.....	150,706.00
543	Sub-Station Equipment, Cars	519,507.00	.....	.....	.....	.....	.....	.....	.....	519,507.00
544	Transmission System, Cars	40,754.00	.....	.....	.....	.....	.....	$2,559.24	*$2,559.24*	38,194.76
	Total—Power	$1,068,207.47	.....	.....	.....	.....	.....	$2,559.24	*$2,559.24*	$1,065,648.23
	IV—GENERAL AND MISCELLANEOUS									
545	Franchises	$600.00	.....	.....	.....	.....	.....	.....	.....	$600.00
	Total—General and Miscellaneous	$600.00	.....	.....	.....	.....	.....	.....	.....	$600.00
	SHOP TOOLS AND SUPPLIES									
...	Shop Tools and Supplies	$24,854.71	.....	.....	.....	.....	.....	.....	.....	$24,854.71
	Total—Shop Tools and Supplies	$24,854.71	.....	.....	.....	.....	.....	.....	.....	$24,854.71
	Total—Road and Equipment	$44,054,886.92	$1,855,493.95	$531,388.94	$1,791,011.33	$4,177,894.22	*$37,361.23*	$2,917,352.43	$1,223,180.56	$45,278,067.48

Italic figures denote loss and deficiency.

SCHEDULE II
MUNICIPAL RAILWAY OF SAN FRANCISCO

BONDED DEBT
June 30, 1948

	Authorized	Unissued	Retired	Outstanding	Dated	Maturity	Interest Paid	Denomination	Interest Rate	
Municipal Railway (1913).....	$3,500,000	.....	$3,000,000	$500,000	12/1/13	$100,000 Dec. 1 (1948-1952)	J & D 1	$100 500 1,000	5%	
1947 Municipal Railway Rehabilitation Bonds ..... (Series "A")	20,000,000	$13,500,000	.....	$6,500,000	2/1/48	434,000 Feb. 1 (1949-1953)	A & F 1	1,000	$868,000 1,735,000	1¼% 1¾%
						433,000 Feb. 1 (1954-1963)			1,732,000 2,165,000	2% 2½%
1947 Market Street Railway Refinancing Bonds	2,200,000	250,000	.....	1,950,000	5/1/48	100,000 May 1 (1949-1951) 500,000 May 1 (1952-1953) 650,000 May 1 (1954)	N & M 1	1,000		1¼%
Total				$8,950,000						

MUNICIPAL RAILWAY OF SAN FRANCISCO
STATEMENT OF OPERATIONS BY TYPES OF SERVICE
Fiscal Year Ended June 30, 1948

	Electric Street Car	Motor Coach	Trolley Coach	Cable Cars	System Total
Total Revenue	$12,659,719.92	$4,444,594.57	$662,250.93	$555,016.49	$18,321,581.91
Operating Expenses	$11,219,353.52	$4,772,104.38	$490,052.98	$594,960.31	$17,076,471.19
Depreciation	744,780.25	283,451.77	40,185.27	19,424.16	1,087,841.45
Accident Reserve	788,330.40	432,664.82	63,960.13	76,900.95	1,361,856.30
Interest	81,225.93	8,143.88	1,873.45	4,210.23	95,453.49
Non-Operating Expense	133,525.97	46,658.70	94.30	9,964.99	190,243.96
Taxes	17,552.68	.....	.....	.....	17,552.68
Total Net Deductions	$12,984,768.75	$5,543,023.55	$596,166.13	$705,460.64	$19,829,419.07
Net Income	*$325,048.83*	*$1,098,428.98*	$66,084.80	*$150,444.15*	*$1,507,837.16*
Bond Redemption	100,000.00	.....	.....	.....	100,000.00
Surplus or *Deficit*	*$426,048.83*	*$1,098,428.98*	$66,084.80	*$150,444.15*	*$1,607,837.16*

Italic figures denote loss and deficiency.

MUNICIPAL RAILWAY OF SAN FRANCISCO
PLANT INVESTMENT BY TYPES OF SERVICE
As of June 30, 1948

	Total Cost	Accrued Depreciation	Excess Value Over Purchase Cost Market Street Extension	Present Value
Electric Street Cars—				
Municipal Railway	$11,428,751.96	$7,956,160.95	.....	$3,472,591.01
Market Street Extension	25,075,111.86	19,791,492.46	$1,454,453.73	3,829,165.67
Electric Street Cars—Total	$36,503,863.82	$27,747,653.41	$1,454,453.73	$7,301,756.68
Cable Cars—Municipal Railway	$5,631.14	$72.52	.....	$5,558.62
Cable Cars—Market Street Extension	1,695,227.69	1,428,423.93	$74,801.81	192,001.95
Cable Cars—Total	$1,700,858.93	$1,428,496.45	$74,801.81	$197,560.57
Motor Coaches—Municipal Railway	$4,387,557.22	$672,008.80	.....	$3,715,548.42
Motor Coaches—Market Street Extension	1,262,493.77	841,601.96	$115,984.14	304,907.67
Motor Coaches—Total	$5,650,050.99	$1,513,610.76	$115,984.14	$4,020,456.09
Trolley Coaches—Municipal Railway	$1,180,421.00	$121,467.30	.....	$1,058,953.70
Trolley Coaches—Market Street Extension	242,872.84	126,772.23	$32,513.37	83,587.24
Trolley Coaches—Total	$1,423,293.84	$248,239.53	$32,513.37	$1,142,540.94
Total Plant Investment— Muncipal Railway	$17,002,361.32	$8,749,709.57	.....	$8,252,651.75
Market Street Extension	28,275,706.16	22,188,290.58	$1,677,753.05	4,409,662.53
Total Plant Investment— Consolidated System	$45,278,067.48	$30,938,000.15	$1,677,753.05	$12,662,314.28

MUNICIPAL RAILWAY OF SAN FRANCISCO
SUMMARY OF INCOME AND OUTLAY
December 28, 1912, to June 30, 1948

INCOME			
Passenger and Other Revenue	$170,232,232.53		
Subsidy from Harbor Commission	70,229.71		
Contributed	2,291,405.86		
Interest on Bonds and Daily Balances	705,920.16		
Miscellaneous Credits—Profit and Loss	370,601.25		
Cash Received from Sale of 1910-1913 Bond Issues	5,481,000.00		
Road and Equipment—from 1947 Bond Fund	1,855,493.95		
Refinancing Bonds—1947—Principal	1,950,000.00		
Refinancing Bonds—1947—Premium	370.50		
Refinancing Bonds—1947—Accrued Interest	406.25		
Rehabilitation Bonds—1947—Accrued Interest	15,886.10		
Total Income and Credits		$182,973,546.31	
OUTLAY			
Operating Expenses	$137,525,039.55		
Bond Interest Charges	4,655,161.74		
Injuries and Damages	7,233,817.05		
Miscellaneous Debits—Profit and Loss	153,669.20		
Interest During Acquisition	397,159.20		
Taxes	54,447.39		
Retirement Charges	243,887.66		
Total Expenses		150,263,181.79	
Excess of Income over Expenses		$32,710,364.52	
Bonds Redeemed—1913 Issue		4,981,000.00	
Balance after Expenses and Bond Redemption		$27,729,364.52	
Expended for Construction Extensions, Betterments, Replacements and Renewals and Road and Equipment Retired		26,137,319.00	
		$1,592,045.52	
Less: Adjustment Account of 1947 Bond Premium and Bond Interest Accrued at Time of Sale—$370.50 —$406.25—$15,886.10 equals		16,662.85	
Balance, Net Cash, Receivables, Stores, etc., on Hand			$1,575,382.67
SOURCE OF FUNDS			
From Bond Sales—1947	$1,855,493.95		
From Bond Sales—1910-1913	5,481,000.00		
From Reconstruction and Replacement Fund	4,243,113.89		
From Earnings and Contributions	15,452,003.49		
Total Road and Equipment Purchased	$27,031,611.33		
Deduct: Retirements	3,360,956.79		
Total Road and Equipment on Hand and in Use (Based on Cost)	$23,670,654.54		
Add: Portion of Retirements Charged to Reserve Less Deferred Credit Portion	2,466,664.46		
	$26,137,319.00		

SUMMARY OF INCOME AND OUTLAY—Continued

CASH		
Cash, Revolving Fund, Net	$15,000.00	
*Cash, Operating Fund, Net	878,282.84	
†Cash, Reconstruction and Replacement Fund, Net	725,461.54	
Cash, Bond Redemption Fund (1913), Net	.....	
Cash, Bond Interest Fund (1910-1913), Net	.....	
Cash, Reserve for Land Purchase	250.00	
‡Cash, Market Street Extension Fund	1,281,821.66	
Cash, Rehabilitation Bond Fund	15,886.10	
Cash, Market Street Railway Refinancing Fund (1947)	5,024.80	
Cash, Market Street Railway Refinancing Bond Interest Fund	406.25	
Total Net Cash		$2,922,133,19
ACCOUNTS RECEIVABLE		
Due from City and County of San Francisco	$22.75	
Miscellaneous Accounts Receivable	52,520.65	
Accounts Receivable—1947 Rehabilitation Bond Fund	16,428.44	
Accounts Receivable—Bond Interest—1947 Rehabilitation Fund	38,271.19	
Total Accounts Receivable		107,243.03
STORES		
Total Stores	$924,628.57	
Less: Reserve for Obsolescence in Inventory	101,908.00	
Total Net Stores		822,720.57
DEFERRED CHARGES		
Prepaid Expenses and Unadjusted Debits		30,276.98
Total Cash, Receivables, Stores, etc		$3,882,373.77
LIABILITIES		
1947 Rehabilitation Bond Interest Not Due	$54,157.29	
1947 Market Street Railway Refinancing Bond Premium	358.42	
1913 Bond Interest—Accrued—Not Due	2,083.33	
1947 Bond Interest—Market Street Railway Refinancing—Not Due	4,062.50	
1947 Market Street Railway Refinancing Warrant Outstanding	487.50	
Accounts Payable, Payrolls Payable, Interfund Accounts Payable	1,831,701.45	
Reserve for Token Liability	240,429.75	
Suspense Credits	8,045.40	
Miscellaneous Deposits	665.46	
Reserve for Employees' Compensation Claims	165,000.00	
		2,306,991.10
Net Free Assets, Exclusive of Outstanding Bonds for Plant in Service totaling $4,305,493.95		$1,575,382.67

*Due to Reconstruction and Replacement Fund from Operating Fund for Cash Transferred for Purchase of Stores $65,031.34

†Due to Operating Fund from Reconstruction and Replacement Fund for Labor and Material on Reconstruction and Replacement Fund Replacement Jobs 206,052.73

‡Due Market Street Extension Fund from Operating Fund for Cash Transferred to Cover Anticipated Expenditures by Operating Fund 1,000,000.00

MUNICIPAL RAILWAY OF SAN FRANCISCO
STATEMENT OF TROLLEY COACH OPERATIONS

Fiscal Year July 1, 1947, to June 30, 1948

RECEIPTS			
Fares		$645,579.08	
Fares United States Postal Employees		2,110.39	
REVENUE CREDITS			
School Tickets		10,355.38	
Total Passenger Revenue			$658,044.85
MISCELLANEOUS REVENUE			
Advertising		4,170.02	
Reimbursement for Damaged Trolley Coaches		36.06	
Total Revenue			$662,250.93
OPERATING EXPENSES			
Group I—Way and Structures		$14,058.26	
Group II—Equipment		52,906.83	
Group III—Power		56,524.79	
Group IV—Conducting Transportation		293,247.87	
Group VI—General and Miscellaneous		73,315.23	
Total Operating Expenses			490,052.98
Note: For detail of operating expenses by account numbers see statement in this report entitled "Cost Statement—Itemized Accounts")			
Operating Profit			$172,197.95
RESERVES AND FIXED CHARGES			
Provision for Accidents	$63,960.13		
Provision for Depreciation	40,185.27		
Interest Charges	1,873.45		
Total Reserves and Fixed Charges			106,018.85
Net Profit Before Retirement Charges			$66,179.10
Loss on Equipment Retired			$94.30
Net Profit			$66,084.80
Average Net Profit Per Day			$180.56

Group		Trolley Coach Miles 1,331,994 Itemized Cost per Mile	Trolley Coach Hours 143,536 Itemized Cost per Hour
I	Way and Structures	.01055	.09794
II	Equipment	.03972	.36860
III	Power	.04244	.39380
IV	Conducting Transportation	.22016	2.04303
VI	General and Miscellaneous	.05504	.51078
	Total Operating Expense	.36791	3.41415
	Provision for Accidents	.04802	.44560
	Provision for Depreciation	.03017	.27997
	Interest Charges	.00140	.01305
	Total Reserves and Fixed Charges	.07959	.73862
	Loss on Retirements	.00007	.00066
	Total Expense	.44757	4.15343
	Passenger Revenue	.49403	4.58453
	Advertising and Miscellaneous Revenue	.00316	.02930
	Total Revenue	.49719	4.61383
	Net Profit	.04962	.46040

Charges to Accident Reserve July 1, 1947, to June 30, 1948:

Proportion Salary Expense—Claims Department	$13,255.30
Accident Claims Paid	47,948.26
Excess Liability Accident Insurance	2,756.57
Total	$63,960.13

PASSENGERS CARRIED

Cash Fares (Fares and Tokens 10c-8⅓c)	7,564,277
School Tickets 3⅛c	331,372
Local Transfers	2,990,364
Foreign Transfers	51,380
Total	10,937,393

MUNICIPAL RAILWAY OF SAN FRANCISCO
STATEMENT OF MOTOR COACH OPERATIONS

Fiscal Year July 1, 1947, to June 30, 1948

RECEIPTS			
Fares	$4,309,290.58		
Fares United States Postal Employees	9,185.08		
Chartered Buses	26,326.10		
REVENUE CREDITS			
School Tickets	64,411.78		
Total Passenger Revenue		$4,409,213.54	
MISCELLANEOUS REVENUE			
Advertising		33,500.93	
Reimbursement for Damaged Coaches		1,880.10	
Total Revenue			$4,444,594.57
OPERATING EXPENSES			
Group I—Way and Structures		$27,088.20	
Group II—Equipment		827,714.99	
Group III—Power		618,788.93	
Group IV—Conducting Transportation		2,676,257.55	
Group VI—General and Miscellaneous		622,254.71	
Total Operating Expenses			4,772,104.38
Note: For detail of operating expenses by account numbers see statement in this report entitled "Cost Statement—Itemized Accounts"			
Operating *Loss*			*$327,509.81*
RESERVES AND FIXED CHARGES			
Provision for Accidents	$432,664.82		
Provision for Depreciation	283,451.77		
Interest Charges	8,143.88		
Total Reserves and Fixed Charges			724,260.47
Net Loss Before Retirement Charges			*$1,051,770.28*
Loss on Equipment Retired			46,658.70
Net Loss			*$1,098,428.98*
Average Net Loss Per Day			*$3,001.17*

Group		Motor Coach Miles 11,767,885 Itemized Cost per Mile	Motor Coach Hours 1,149,117 Itemized Cost per Hour
I	Way and Structures	.00230	.02357
II	Equipment	.07034	.72030
III	Power	.05258	.53849
IV	Conducting Transportation	.22742	2.32897
VI	General and Miscellaneous	.05288	.54151
	Total Operating Expense	.40552	4.15284
	Provision for Accidents	.03676	.37652
	Provision for Depreciation	.02409	.24667
	Interest Charges	.00069	.00709
	Total Reserves and Fixed Charges	.06154	.63028
	Loss on Retirements	.00397	.04060
	Total Expense	.47103	4.82372
	Passenger Revenue	.37468	3.83704
	Advertising and Miscellaneous Revenue	.00301	.03079
	Total Revenue	.37769	3.86783
	Net *Loss*	*.09334*	*.95589*

Charges to Accident Reserve July 1, 1947, to June 30, 1948:

Proportion Salary Expense—Claims Department	$117,177.40
Accident Claims Paid	301,292.96
Excess Liability Accident Insurance	14,194.46
Total	$432,664.82

PASSENGERS CARRIED

Cash Fares (Fares and Tokens—10c-8⅓c)	50,314,708
School Tickets 3⅛c	2,061,177
Chartered Coaches	238,907
Local Transfers	30,996,241
Foreign Transfers	274,635
Total	83,885,668

Italic figures denote loss and deficiency.

MUNICIPAL RAILWAY OF SAN FRANCISCO
STATEMENT OF CABLE CAR OPERATIONS

Fiscal Year July 1, 1947, to June 30, 1948

RECEIPTS			
Fares		$543,397.43	
Fares United States Postal Employees		1,167.98	
REVENUE CREDITS			
School Tickets	7,985.61		
Total Passenger Revenue		$552,551.02	
MISCELLANEOUS REVENUE			
Advertising		2,380.11	
Reimbursement for Damaged Cable Cars		85.36	
Total Revenue			$555,016.49
OPERATING EXPENSES			
Group I—Way and Structures		$96,775.63	
Group II—Equipment		46,578.66	
Group III—Power		98,229.72	
Group IV—Conducting Transportation		300,268.11	
Group VI—General and Miscellaneous		53,108.19	
Total Operating Expenses			594,960.31
Note: For detail of operating expenses by account numbers see statement in this report entitled "Cost Statement—Itemized Accounts"			
Operating *Loss*			*$39,943.82*
RESERVES AND FIXED CHARGES			
Provision for Accidents	$76,900.95		
Provision for Depreciation	19,424.16		
Interest Charges	4,210.23		
Total Reserves and Fixed Charges			100,535.34
Net Loss Before Retirement Charges			*$140,479.16*
Loss on Equipment Retired			9,964.99
Net Loss			*$150,444.15*
Average Net Loss Per Day			*$411.05*

Italic figures denote loss and deficiency.

Group		Cable Car Miles 436,424 Itemized Cost per Mile	Cable Car Hours 81,992 Itemized Cost per Hour
I	Way and Structures	.22174	1.18031
II	Equipment	.10673	.56809
III	Power	.22508	1.19804
IV	Conducting Transportation	.68802	3.66216
VI	General and Miscellaneous	.12169	.64772
	Total Operating Expense	1.36326	7.25632
	Provision for Accidents	.17620	.93791
	Provision for Depreciation	.04451	.23690
	Interest Charges	.00965	.05135
	Total Reserves and Fixed Charges	.23036	1.22616
	Loss on Retirement	.02284	.12154
	Total Expense	1.61646	8.60402
	Passenger Revenue	1.26609	6.73908
	Advertising and Miscellaneous Revenue	.00565	.03007
	Total Revenue	1.27174	6.76915
	Net Loss	*.34472*	*1.83487*

Charges to Accident Reserve July 1, 1947, to June 30, 1948:

Proportion Salary Expense—Claims Department	$4,333.50
Accident Claims Paid	71,664.35
Excess Liability Accident Insurance	903.10
Total	$76,900.95

PASSENGERS CARRIED

Cash Fares (Fares and Tokens—10c-8⅓c)	6,252,538
School Tickets 3⅛c	255,539
Local Transfers	3,145,393
Foreign Transfers	239,880
Total	9,893,350

Italic figures denote loss and deficiency.

MUNICIPAL RAILWAY OF SAN FRANCISCO
CAR AND COACH HOURS AND MILES OPERATED
CASH FARES AND TOKENS REGISTERED

Fiscal Year 1947-1948

Lines		Car and Coach Hours	Car and Coach Miles	Cash Fares and Tokens Registered	Cash Fares and Tokens Registered Per Car or Coach Hour	Cash Fares and Tokens Registered Per Car or Coach Mile
ELECTRIC CARS						
B	Geary Street	107,347	996,988	$948,995.77	$8.84	$.95
C	California Street	69,364	617,799	553,208.69	7.98	.90
D	Van Ness Avenue	53,441	404,710	399,541.30	7.48	.99
F	Stockton Street	88,883	680,344	836,791.95	9.41	1.23
H	Potrero Avenue	126,534	1,023,489	679,243.52	5.37	.66
J	Church Street	81,121	619,781	570,281.39	7.03	.92
K	Market Street	110,533	1,100,515	687,365.11	6.22	.62
L	Taraval Street	123,210	1,182,668	806,815.45	6.55	.68
M	Ocean View	33,354	329,324	167,151.56	5.01	.51
N	Judah Street	124,903	1,136,415	907,920.83	7.27	.80
1	Sutter-California	39,462	353,730	299,729.08	7.60	.85
2	Sutter-Clement	43,093	390,666	309,011.44	7.17	.79
3	Sutter-Jackson	22,379	146,385	194,848.04	8.71	1.33
4	Sutter-Sacramento	26,507	201,143	202,141.71	7.63	1.00
*5	McAllister	57,437	519,341	403,479.97	7.02	.78
6	Haight-Masonic	32,675	259,597	188,971.92	5.78	.73
7	Haight-Ocean	89,272	782,130	599,290.26	6.71	.77
8	Market-Corbett	17,733	128,601	91,478.78	5.16	.71
9	Mission-Richland	30,811	251,577	208,159.66	6.76	.83
11	Mission-24th	37,444	280,111	260,617.87	6.96	.93
12	Ingleside	5,443	53,498	28,218.95	5.18	.53
14	Mission	149,114	1,381,975	1,190,366.18	7.98	.86
*20	Ellis-O'Farrell	6,213	45,707	41,358.58	6.66	.90
*21	Hayes	42,941	354,856	265,874.73	6.19	.75
22	Fillmore	107,922	786,334	678,722.13	6.29	.86
25	San Bruno	28,084	219,052	147,511.76	5.25	.67
27	Bryant	3,424	26,703	19,961.87	5.83	.75
31	Balboa	60,549	551,780	394,408.80	6.51	.71
*32	Market-Duboce	8,277	59,219	40,888.39	4.94	.69
40	San Mateo	41,409	646,118	177,702.42	4.29	.28
	Chartered Cars	.....	.....	.....	....	....
	Total—Electric Cars	1,768,879	15,530,556	$12,300,058.11	$6.95	$.79
MOTOR COACH ROUTES						
1	Park	67,547	745,384	$233,679.57	$3.46	$.31
*1 & 2	Sutter	33,733	344,895	169,530.77	5.03	.49
2	Sunset Express	51,390	541,116	199,231.50	3.88	.37
3	Park-Mission	60,905	800,927	159,803.74	2.62	.20
3M	Sutter-Jackson	8,698	89,561	16,048.23	1.85	.18
4	Embarcadero	24,455	223,542	104,996.44	4.29	.47
4M	Sutter-Sacramento	3,949	45,473	8,000.19	2.03	.18
5	Marina	7,432	61,750	20,797.62	2.80	.34
5M	McAllister	37,356	393,883	165,657.40	4.43	.42
6	Eureka	30,521	275,517	142,999.80	4.69	.52
6M	Haight-Masonic	7,473	77,543	9,289.84	1.24	.12
7	Miraloma	17,653	191,921	26,392.41	1.50	.14
7M	Haight Street Owl	1,755	21,130	2,768.78	1.58	.13
*8	Market-Corbett	2,387	20,913	2,159.37	.90	.10
9	Bayshore	8,628	107,679	11,387.57	1.32	.11
10	Lincoln Way-Cabrillo	6,996	68,963	6,323.76	.90	.09
11	Telegraph Hill	7,169	45,767	13,025.39	1.82	.28
11M	Mission-24th	4,926	37,563	14,180.41	2.88	.38
14	Roosevelt	17,097	171,985	42,674.05	2.50	.25
14M	Colma-Daly City Owl	6,627	70,241	18,595.04	2.81	.26
15	Kearny-Beach	174,553	1,669,511	831,110.77	4.76	.50
*15E	Third Street Express	696	7,900	2,135.91	3.07	.27

CAR AND COACH HOURS AND MILES OPERATED—Continued

Lines		Car and Coach Hours	Car and Coach Miles	Cash Fares and Tokens Registered	Cash Fares and Tokens Registered Per Car or Coach Hour	Cash Fares and Tokens Registered Per Car or Coach Mile
*16	Kearny-Third	10,855	84,632	54,077.99	4.98	.64
17	Park-Merced	4,907	57,853	12,580.56	2.56	.22
18	Sloat Blvd.	12,182	142,808	17,510.43	1.44	.12
18M	Ocean View	6,529	69,194	7,277.85	1.11	.11
19	9th and Polk	60,074	503,992	291,882.85	4.86	.58
20	Park-Ellis	38,986	401,130	161,391.40	4.14	.40
21M	Hayes	20,262	192,375	93,825.05	4.63	.49
22	Fillmore-Owl	4,122	38,296	8,633.33	2.09	.23
23	Richland-Monterey	6,663	65,269	11,416.00	1.71	.17
24	Castro-Divisadero	57,041	471,942	277,797.55	4.87	.59
25	San Bruno	16,014	231,664	36,583.99	2.28	.16
26	Guerrero-Daly City	62,144	706,000	235,731.36	3.79	.33
27	Bryant	28,325	297,332	85,906.91	3.03	.29
29	Geneva-Mission-Wilde	12,092	125,107	45,141.53	3.73	.36
*30	Van Ness-Presidio	3,240	32,472	6,548.78	2.02	.20
31	Balboa	21,347	254,798	76,752.79	3.60	.30
36	Folsom	20,176	212,754	46,174.30	2.29	.22
42	3rd and Hunters Point	41,589	429,134	215,352.68	5.18	.50
44	Sansome	266	1,673	665.37	2.50	.40
50	Geneva Avenue	18,608	213,501	57,165.08	3.07	.27
51	Silver Avenue	25,731	298,170	77,288.07	3.00	.26
52	Excelsior	9,225	92,742	30,235.62	3.28	.33
53	Southern Heights	13,426	116,451	33,870.77	2.52	.29
54	Hunters Point	23,455	256,634	54,343.72	2.32	.21
55	Sacramento-Clay	22,625	179,152	106,912.41	4.73	.60
57	Candlestick Cove	4,405	58,659	12,545.44	2.85	.21
60	Jackson Cable Emerg. Service	24	205	75.87	3.16	.37
*70	Hunters Point Ridge Route	8,332	72,743	14,779.51	1.77	.20
75	Legion of Honor	944	7,211	1,298.78	1.38	.18
*C	Geary Owl	5,190	57,604	11,613.35	2.24	.20
E	Union	580	5,041	619.45	1.07	.12
H	Potrero Owl	5,148	58,470	9,369.05	1.82	.16
*L	Emergency Service	1,409	12,292	2,063.40	1.46	.17
*2	Sutter-Clement Emerg. Service	16	160	18.97	1.19	.12
40	San Mateo Emerg. Service	3	30	2.12	.71	.07
	Demonstrator	70	674	.....	....	....
	Chartered Motor Coaches	1,166	6,557	19,145.71	16.42	2.92
	Total—Motor Coaches	1,149,117	11,767,885	$4,317,386.60	$3.76	$.37
TROLLEY COACH ROUTES						
*E	Howard-Union	91,130	813,205	$452.819.68	$4.97	$.56
*R	Howard	2,201	20,020	10,856.29	4.93	.54
33	18th and Park	50,205	498,769	180.916.71	3.60	.36
	Total—Trolley Coaches	143,536	1,331,994	$644,592.68	$4.49	$.48
CABLE CARS						
59	Powell-Bay	35,288	179,868	$240,408.17	$6.83	$1.34
60	Powell-Jackson	46,704	256,556	302,598.81	6.48	1.18
	Total—Cable Cars	81,992	436,424	$543,006.98	$6.62	$1.24
	Total—Electric Car, Motor Coach, Trolley Coach and Cable Car	3,143,524	29,066,859	$17,805,044.37	$5.66	$.61

*For changes in car and coach lines operated, see detail at end of statement entitled "Recapitulation of Passenger Traffic."

MUNICIPAL RAILWAY OF SAN FRANCISCO
COMPARISON STATEMENT OF PASSENGERS CARRIED, MILEAGE AND HOURS OPERATED
Fiscal Years 1946-1947 and 1947-1948

	1946-1947			1947-1948			Increase *Decrease*	Per Cent Increase *Decrease*
	Fare	Transfers	Total	Fare	Transfers	Total		
PASSENGERS CARRIED								
Electric Cars	168,165,395	57,079,249	225,244,644	149,769,936	53,488,699	203,258,635	*21,986,009*	*9.761*
Cable Cars	5,926,214	3,312,830	9,239,044	6,508,077	3,385,273	9,893,350	654,306	7.082
Trolley Coaches	5,005,269	1,981,963	6,987,232	7,895,649	3,041,744	10,937,393	3,950,161	56.534
Motor Coaches	44,906,806	28,245,338	73,152,144	52,614,792	31,270,876	83,885,668	10,733,524	14,673
System Total	224,003,684	90,619,380	314,623,064	216,788,454	91,186,592	307,975,046	*6,648,018*	*2.113*
MILEAGE OPERATED								
Electric Cars	.....	.....	18,305,797	.....	.....	15,530,556	*2,775,241*	*15.160*
Cable Cars	.....	.....	458,162	.....	.....	436,424	*21,738*	*4.745*
Trolley Coaches	.....	.....	852,085	.....	.....	1,331,994	479,909	56.322
Motor Coaches	.....	.....	10,447,255	.....	.....	11,767,885	1,320,630	12.641
System Total	.....	.....	30,063,299	.....	.....	29,066,859	*996,440*	*3.314*
HOURS OPERATED								
Electric Cars	.....	.....	2,078,734	.....	.....	1,768,879	*309,855*	*14.906*
Cable Cars	.....	.....	84,034	.....	.....	81,992	*2,042*	*2.430*
Trolley Coaches	.....	.....	93,557	.....	.....	143,536	49,979	53.421
Motor Coaches	.....	.....	1,007,625	.....	.....	1,149,117	141,492	14.042
System Total	.....	.....	3,263,950	.....	.....	3,143,524	*120,426*	*3.690*

Italic figures denote loss and deficiency.

MUNICIPAL RAILWAY OF SAN FRANCISCO
RECEIPTS PER HOUR BY TYPES OF SERVICE

	Fiscal Year 1947-1948			Fiscal Year 1946-1947		
	Amount	Car or Coach Hours	Per Car or Coach Hour	Amount	Car or Coach Hours	Per Car or Coach Hour
STREET CARS		1,768,879			2,078,734	
Cash Fares and Registered Tokens	$12,300,058.11		$6.95	$13,932,528.15		$6.70
Total Passenger Receipts	12,551,712.82		7.10	14,186,605.58		6.82
Total Receipts—All Sources	12,709,568.87		7.19	14,351,926.51		6.90
MOTOR COACHES		1,149,117			1,007,625	
Cash Fares and Registered Tokens	4,298,240.89		3.74	3,688,605.45		3.66
Total Passenger Receipts	4,409,213.54		3.84	3,778,212.04		3.75
Total Receipts—All Sources	4,444,594.57		3.87	3,808,309.93		3.78
TROLLEY COACHES		143,536			93,557	
Cash Fares and Registered Tokens	644,592.68		4.49	415,144.63		4.44
Total Passenger Receipts	658,044.85		4.58	422,017.68		4.51
Total Receipts—All Sources	662,250.93		4.61	424,498.99		4.54
CABLE CARS		81,992			84,034	
Cash Fares and Registered Tokens	543,006.98		6.62	495,294.53		5.89
Total Passenger Receipts	552,551.02		6.74	503,181.41		5.99
Total Receipts—All Sources	555,016.49		6.77	505,392.47		6.01
ELECTRIC AND CABLE CARS AND MOTOR AND TROLLEY COACHES		3,143,524			3,263,950	
Cash Fares and Registered Tokens	17,785,898.66		5.66	18,531,572.76		5.68
Total Passenger Receipts	18,171,522.23		5.78	18,890,016.71		5.79
Total Receipts—All Sources	18,371,430.86		5.84	19,093,922.65		5.85

MUNICIPAL RAILWAY OF SAN FRANCISCO
RECAPITULATION OF PASSENGER TRAFFIC

Fiscal Year July 1, 1947 to June 30, 1948
SYSTEM

	Number of Cash Fares	Number of Registered Tokens	Number of Postal Employees	Chartered Coach Passengers	Excursion Tickets	School Tickets	Non-Revenue Transfers Total	Local Transfers	Total Passengers
Electric Street Car Lines	23,553,541	119,438,349	562,938	.....	37,324	6,177,784	797,003	52,691,696	203,258,635
Cable Street Car Lines	1,411,236	4,827,286	14,016	.....	.....	255,539	239,880	3,145,393	9,893,350
Trolley Coach Routes	1,039,983	6,498,969	25,325	.....	.....	331,372	51,380	2,990,364	10,937,393
Motor Coach Routes	7,535,000	42,669,487	110,221	238,907	.....	2,061,177	274,635	30,996,241	83,885,668
System Total	33,539,760	173,434,091	712,500	238,907	37,324	8,825,872	1,362,898	89,823,694	307,975,046

1947 (Notes for Fiscal Year)

July 18—Increase in Fare Structure California Street Cable Railway from 10c-8⅓c to straight 10c Fare.
July 20—"E" Motor Coach Route ceased operation.
July 21—"R" Trolley Coach Route consolidated with "E" Trolley Coach Route.
August—2-S Motor Coach Route emergency service on Sutter Line.
October 4—No. 16 Motor Coach Route ceased operation.
October 5—No. 1 and 2 Motor Coach Route commenced operation.
October 7—"L" Motor Coach Route commenced Operation.
October 11—No. 20 Electric Street Car Line ceased operation.
October 24—No. 8 Motor Coach Route commenced operation.
October 29—No. 8 Motor Coach Route ceased operation.
November 10—No. 15 Express Motor Coach Route ceased operation.
December 5—"L" Motor Coach Route ceased operation.

1948

January 18—"C" Motor Coach Route commenced operation.
January 19—No. 8 Motor Coach Route commenced operation.
February 8—No. 30 Motor Coach Route commenced operation.
March 13—No. 70 Motor Coach Route ceased operation.
March 14—California Daylight Saving Time in effect at 2:01 a.m.
March 15—No. 32 Electric Street Car Line commenced operation.
April 4—No. 14 Electric Street Car Line Sunday Service extended to Holy Cross Cemeteries.
June 6—No. 5 Electric Street Car Line ceased operation.
June 6—No. 21 Electric Street Car Line ceased operation.
June 6—No. 32 Electric Street Car Line ceased operation.

MUNICIPAL RAILWAY OF SAN FRANCISCO
STATEMENT OF CAR AND COACH MILEAGE AND CAR AND COACH HOURS OPERATED AND TOTAL PASSENGERS CARRIED

Period December 28, 1912 to June 30, 1948

Year	Car and Coach Mileage	Car and Coach Hours	Total Passengers Carried
12/28/12 to 12/31/13	1,300,869	129,050	9,723,177
1/ 1/14 to 12/31/14	3,282,012	362,333	27,933,049
1/ 1/15 to 6/30/15	3,112,910	368,841	24,670,130
7/ 1/15 to 6/30/16	6,358,543	737,214	47,886,784
7/ 1/16 to 6/30/17	5,317,270	580,717	36,234,723
7/ 1/17 to 6/30/18	6,935,090	766,997	62,396,036
7/ 1/18 to 6/30/19	7,212,763	779,746	59,341,253
7/ 1/19 to 6/30/20	7,419,272	795,578	66,169,246
7/ 1/20 to 6/30/21	7,538,737	806,761	69,960,834
7/ 1/21 to 6/30/22	7,677,307	811,292	70,757,908
7/ 1/22 to 6/30/23	8,148,703	853,157	73,633,760
7/ 1/23 to 6/30/24	8,676,611	900,224	77,736,617
7/ 1/24 to 6/30/25	8,897,271	921,280	79,900,645
7/ 1/25 to 6/30/26	9,302,073	961,451	83,390,908
7/ 1/26 to 6/30/27	9,428,522	975,949	83,603,652
7/ 1/27 to 6/30/28	9,657,311	999,243	85,281,171
7/ 1/28 to 6/30/29	9,903,754	1,028,345	85,683,664
7/ 1/29 to 6/30/30	10,186,213	1,054,514	87,673,608
7/ 1/30 to 6/30/31	10,114,999	1,042,925	85,250,762
7/ 1/31 to 6/30/32	9,770,683	995,524	80,123,238
7/ 1/32 to 6/30/33	9,251,492	918,120	71,815,286
7/ 1/33 to 6/30/34	8,875,788	876,820	73,063,608
7/ 1/34 to 6/30/35	8,937,287	883,914	78,849,085
7/ 1/35 to 6/30/36	8,751,421	867,581	79,116,866
7/ 1/36 to 6/30/37	8,763,838	872,873	80,754,084
7/ 1/37 to 6/30/38	9,212,687	919,678	90,290,519
7/ 1/38 to 6/30/39	9,810,068	1,003,126	107,739,849
7/ 1/39 to 6/30/40	10,058,316	1,049,720	111,305,527
7/ 1/40 to 6/30/41	10,266,038	1,064,439	108,822,011
7/ 1/41 to 6/30/42	10,389,525	1,083,008	113,956,341
7/ 1/42 to 6/30/43	11,322,394	1,191,164	142,896,226
7/ 1/43 to 6/30/44	12,100,522	1,278,151	167,348,356
7/ 1/44 to 6/30/45	24,811,168	2,678,453	295,306,166
7/ 1/45 to 6/30/46	29,454,947	3,197,392	326,007,393
7/ 1/46 to 6/30/47	30,063,299	3,263,950	314,623,064
7/ 1/47 to 6/30/48	29,066,859	3,143,524	307,975,046
12/28/12 to 6/30/48	381,376,562	40,163,054	3,767,220,592

MUNICIPAL RAILWAY OF SAN FRANCISCO
COMPARATIVE STATEMENT OF OPERATING DATA
Fiscal Years Ended June 30, 1948, and June 30, 1947

	Fiscal Year Ended June 30, 1948				Fiscal Year Ended June 30, 1947			
	Total	Ratio to Passenger Revenue	Per Car and Coach Mile	Per Car and Coach Hour	Total	Ratio to Passenger Revenue	Per Car and Coach Mile	Per Car and Coach Hour
Passenger Revenue	$18,171,522	100.000	.6252	5.7806	$18,890,017	100.000	.6283	5.7875
Operating Expense	17,076,471	93.974	.5875	5.4323	16,526,518	87.487	.5497	5.0633
Interest	96,328	.530	.0033	.0306	117,804	.624	.0039	.0361
Provision for Depreciation	1,087,841	5.987	.0374	.3461	1,073,838	5.685	.0357	.3290
Provision for Accidents	1,361,856	7.494	.0469	.4332	1,889,002	10.000	.0628	.5787
Taxes	17,553	.097	.0006	.0056	14,116	.075	.0005	.0043
Net Income	*1,507,837*	*8.298*	*.0519*	*.4797*	*531,150*	*2.812*	*.0177*	*.1627*
Passenger Car, Cable Car and Coach Mileage	29,066,859	.....	....	....	30,063,299	.....	....	....
Passenger Car, Cable Car and Coach Hours	3,143,524	.....	....	....	3,263,950	.....	....	....
Platform Expense: Passenger Car, Cable Car and Coach	$8,080,484	44.468	.2780	2.5705	$8,218,237	43.505	.2734	2.5179
Revenue Passengers Carried	216,788,454	.....	7.4583	68.9635	224,003,684	.....	7.4511	68.6296
Free Transfer Passengers Carried	91,186,592	.....	3.1371	29.0078	90,619,380	.....	3.0143	27.7637
Total Passengers Carried	307,975,046	.....	10.5954	97.9713	314,623,064	.....	10.4654	96.3933

	1948	1947
Number of Employees	3,628	4,106
Rate of Fare Free Transfer: Token	8⅓c	8⅓c
Cash	10c	10c
Miles of Single Track:		
Owned and Operated (Including Spurs, Turnouts, Sidings, and Carhouse Tracks)		
Electric	222.534	247.702
Cable	6.792	6.820
Total	229.326	254.522
Owned Non-Operated:		
Electric	62.662	40.958
Cable	2.360	4.008
Total	65.022	44.966
Total Single Track Owned	294.348	299.488
Motor Coach Routes:		
Round Trip Miles of Street Traversed	339.800	342.020

	1948	1947
Trolley Coach Routes:		
Round Trip Miles of Street Traversed	24.460	24.330
Number of Passenger Electric Cars Owned	553	599
Number of Passenger Cable Cars Owned	27	38
Number of Motor Coaches Owned	367	253
Number of Motor Coaches Leased	....	19
Number of Trolley Coaches Owned	58	34
Total Number of Passenger Equipment Units Owned and Leased	1,005	943
Number of Electric Work Cars Owned	23	30
Number of Motor Trucks Owned	52	54
Number of Passenger Automobiles Owned	24	24
Number of Motorcycles Owned	11	13
Number of Trailers Owned	29	39
Number of Tractors Owned	2	2
Number of Gasoline Rail Inspection Cars Owned	2	2
Total Number of Service Units Owned	143	164

Italic figures denote loss and deficiency.

MUNICIPAL RAILWAY OF SAN FRANCISCO
COST STATEMENT—ITEMIZED ACCOUNTS

Fiscal Year July 1, 1947 to June 30, 1948

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	ELECTRIC STREET CAR OPERATION ONLY			
	I—WAY AND STRUCTURES			
1	Superintendence of Way & Structures	$18,646.42	.00120	.01054
2	Ballast	766.41	.00005	.00043
3	Ties	8,815.33	.00057	.00498
4	Rails	6,159.34	.00040	.00348
5	Rail Fastenings and Joints	22,241.58	.00143	.01257
6	Special Work	1,998.72	.00013	.00113
8	Track and Roadway Labor	380,662.25	.02451	.21520
9	Small Tools and Roadway Expenses	13,146.26	.00085	.00743
10	Paving	59,881.34	.00385	.03385
11	Cleaning and Sanding Tracks	61,603.42	.00397	.03483
13	Tunnels and Subways	316.32	.00002	.00018
15	Bridges, Trestles and Culverts	174.10	.00001	.00010
16	Crossings, Fences and Signs	5,439.36	.00035	.00308
17	Signals and Interlockers	8,138.24	.00052	.00460
18	Communication Systems—Repairs	2,834.26	.00018	.00160
19	Miscellaneous Way Expenses	541.67	.00003	.00031
22A	Overhead Feeders	9,786.92	.00063	.00553
22B	Underground Feeders	1,642.90	.00010	.00093
22C	Track Bonding	2,497.27	.00016	.00141
22D	Overhead Trolleys	82,745.40	.00533	.04678
22H	Poles and Fixtures	24,329.70	.00157	.01376
22I	Underground Conduits	454.14	.00003	.00026
23	Miscellaneous Electric Line Expenses.	104.08	.00001	.00006
24C	Car Houses	18,151.68	.00117	.01026
24D	Shops	10,805.06	.00069	.00611
24E	General Offices	2,902.56	.00019	.00164
24F	Stations, Waiting Rooms & Platforms	4,508.16	.00029	.00255
24H	Misc. Buildings and Structures	6,246.27	.00040	.00353
28	Transportation for Investment: Credit	*8,138.62*	*.00052*	*.00460*
28.3	Dismantling Retired Way & Structures	46,701.39	.00301	.02640
	Total—Way and Structures	$794,101.93	.05113	.44893

Italic figures denote loss and deficiency.

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	II—EQUIPMENT			
29	Superintendence of Equipment.....	$13,503.56	.00087	.00763
30	Passenger and Combination Cars.....	622,490.12	.04008	.35191
32	Service Equipment, Electric.....	2,003.62	.00013	.00113
33	Electric Equipment, Propulsion.....	252,748.79	.01627	.14289
36	Shop Equipment, Machinery and Tools	14,054.87	.00091	.00795
37	Shop Expenses	42,942.62	.00277	.02428
38	Maintenance of Automotive and Miscellaneous Equipment	21,767.93	.00140	.01231
41	Store Expense, Clearing.....	*5,365.97*	*.00035*	*.00303*
44.3	Dismantling Retired Equipment.....	2,928.57	.00019	.00165
	Total—Equipment	$967,074.11	.06227	.54672
	III—POWER			
45	Superintendence of Power.....	$7,991.60	.00051	.00452
46	Power Plant Buildings, Fixtures and Grounds	1,281.08	.00008	.00072
47	Power Plant Equipment.....	916.26	.00006	.00052
52	Power Plant Employees.....	110,500.10	.00712	.06247
56	Miscellaneous Supplies for Power....	4,345.65	.00028	.00246
59	Power Purchased for Operation.....	950,104.14	.06118	.53712
59A	Power Purchased for Lighting Carbarns	8,952.65	.00058	.00506
59B	Power Purchased for Lighting Tunnels	2,342.79	.00015	.00132
	Total—Power	$1,086,434.27	.06996	.61419
	IV—CONDUCTING TRANSPORTATION			
63	Superintendence of Transportation...	$503,211.73	.03240	.28448
64A	Conductors	2,960,117.32	.19060	1.67344
64B	Motormen	2,772,697.26	.17853	1.56749
66	Misc. Car Service Employees.....	11,993.59	.00077	.00678
67B	Lubricants and Waste.....	11,454.77	.00074	.00648
67C	Special Agents and Fare Registers...	11,541.54	.00074	.00652
67D	Incandescent Lamps	3,712.01	.00024	.00210
67E	Cleaning Materials and Misc. Supplies	20,121.39	.00130	.01138
68	Station Employees	18,635.76	.00120	.01054
69	Station Expenses	7,376.61	.00048	.00417
70	Carhouse Employees: Cleaning, Washing, Greasing, Servicing.....	511,960.90	.03296	.28943
71	Building Expenses and Services.....	17,149.36	.00110	.00969
72	Operation of Signal and Interlocking Apparatus	10,416.60	.00067	.00589
73	Operation of Telephone and Central Control System.....	39,136.08	.00252	.02212
78	Other Transportation Expenses.....	13,151.95	.00085	.00743
	Total—Conducting Transportation	$6,912,676.87	.44510	3.90794

Italic figures denote loss and deficiency.

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	VI—GENERAL AND MISCELLANEOUS			
83	Sal. and Exp. of General Officers	$33,903.67	.00218	.01917
84	Sal. and Exp. of General Clerks	209,661.80	.01350	.11853
85	General Office Supplies and Expenses	21,007.18	.00135	.01188
88	Pension Cost	766,999.56	.04939	.43361
88B	Sick Leave	238,268.09	.01534	.13470
88D	Sick Leave—Medical Fees	3,419.68	.00022	.00193
88E	Military Leave	370.36	.00003	.00021
89	Miscellaneous General Expenses	15,520.33	.00100	.00877
92D	Compensation—Injuries and Damages, Employees	58,640.89	.00378	.03315
93	Insurance	15,555.44	.00100	.00879
94	Stationery and Printing	13,699.41	.00088	.00774
94A	Tickets and Transfers	28,615.03	.00184	.01618
95	Store Expenses	56,714.00	.00365	.03206
96	Fuel and Servicing Auto Serv. Equip.	7,337.62	.00047	.00415
	Credit Charges to Trolley Coach Oper.	*1,067.36*	*.00007*	*.00060*
	Credit Charges to Motor Coach Oper.	*9,214.80*	*.00059*	*.00521*
	Credit Charges to Cable Car Oper.	*364.56*	*.00002*	*.00021*
	Total—General and Miscellaneous	$1,459,066.34	.09395	.82485
	RECAPITULATION—ELECTRIC STREET CAR OPERATION ONLY			
IA	Accounts 1 to 11 Inclusive	$573,921.07	.03695	.32445
IB	Accounts 13 to 28 Inclusive	220,180.86	.01418	.12448
I	Way and Structures—Total Accounts 1 to 28 Inclusive	794,101.93	.05113	.44893
II	Equipment	967,074.11	.06227	.54672
III	Power	1,086,434.27	.06996	.61419
IV	Conducting Transportation	6,912,676.87	.44510	3.90794
VI	General and Miscellaneous	1,459,066.34	.09395	.82485
	Total—Operating Expenses	$11,219,353.52	.72241	6.34263
	Depreciation Reserve $1,087,841.45			
	Less Applicable to Cable Cars and Coaches 343,061.20	$744,780.25	.04795	.42105
	Accident Reserve $1,361,856.30			
	Less Applicable to Cable Cars and Coaches 573,525.90	788,330.40	.05076	.44567
	Interest During Acquisition $64,725.99			
	Bond Interest 30,727.50	$95,453.49		
	Less Applicable to Cable Cars and Coaches 14,227.56	81,225.93	.00523	.04592
	Taxes—Street Cars Only	17,552.68	.00113	.00992
	Grand Total	$12,851,242.78	.82748	7.26519
	Car Mileage 15,530,556			
	Car Hours 1,768,879			

Italic figures denote loss and deficiency.

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	CABLE STREET CAR OPERATION ONLY			
	I—WAY AND STRUCTURES			
C1	Superintendence of Way and Structures, C.C.	$526.19	.00121	.00642
C4	Rails	302.44	.00069	.00369
C5	Rail Fastenings and Joints	2,934.33	.00672	.03578
C6	Special Work	4.91	.00001	.00006
C7	Underground Construction	2,839.36	.00651	.03463
C8	Track and Roadway Labor	50,269.95	.11519	.61311
C9	Small Tools and Roadway Expenses	185.05	.00042	.00226
C10	Paving	2,788.19	.00639	.03400
C11	Cleaning and Sanding Tracks	31,179.65	.07144	.38028
C16	Crossings, Fences and Signs	80.00	.00018	.00098
C17	Signals and Interlockers	2,964.59	.00679	.03616
C19	Miscellaneous Way Expenses	17.80	.00004	.00022
C24C	Car Houses	2,582.14	.00592	.03149
C24D	Shops	92.03	.00021	.00112
C24E	General Offices	9.00	.00002	.00011
	Total—Way and Structures	$96,775.63	.22174	1.18031
	II—EQUIPMENT			
C29	Superintendence of Equipment	$378.12	.00087	.00461
C30	Passenger and Combination Cars	29,548.91	.06771	.36039
C33	Grip and Dies, C.C.	15,205.17	.03484	.18545
C36	Shop Equipment, Machinery and Tools	197.25	.00045	.00241
C37	Shop Expenses	883.36	.00202	.01077
C38	Maintenance of Automotive and Miscellaneous Equipment	612.04	.00140	.00746
C41	Store Expense—Clearing	*246.19*	*.00056*	*.00300*
	Total Equipment	$46,578.66	.10673	.56809
	III—POWER			
C45	Superintendence of Power	$5,297.69	.01214	.06461
C46	Power Plant Buildings, Fixtures and Grounds	173.75	.00040	.00212
C47-1	Power Plant Equipment	704.32	.00161	.00859
C47-2	Power Plant Equipment, Cables	44,549.14	.10208	.54333
C52	Power Plant Employees	30,722.95	.07040	.37471
C56	Miscellaneous Supplies for Power	821.67	.00188	.01002
C59	Power Purchased for Operation	15,960.20	.03657	.19466
	Total—Power	$98,229.72	.22508	1.19804

Italic figures denote loss and deficiency.

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	IV—CONDUCTING TRANSPORTATION			
C63	Superintendence of Transportation...	$14,130.23	.03238	.17234
C64	Cable Car Operators.....	254,413.84	.58295	3.10291
C66	Misc. Car Service Employees.....	357.05	.00082	.00435
C67B	Lubricants and Waste.....	219.84	.00050	.00268
C67C	Special Agents and Fare Registers....	325.38	.00075	.00397
C67E	Cleaning Materials and Misc. Supplies.	431.81	.00099	.00527
C69	Station Expenses	150.00	.00034	.00183
C70	Carhouse Employees: Cleaning, Washing, Greasing, Servicing.....	19,876.28	.04554	.24242
C71	Building Expenses and Services.....	341.26	.00078	.00416
C72	Operation of Signal and Interlocking Apparatus	8,865.71	.02031	.10813
C73	Operation of Telephone and Central Control System.....	1,102.21	.00253	.01344
C78	Other Transportation Expenses.....	54.50	.00013	.00066
	Total—Conducting Transportation	$300,268.11	.68802	3.66216
	VI—GENERAL AND MISCELLANEOUS			
C83	Sal. and Exp. of General Officers.....	$950.93	.00218	.01160
C84	Sal. and Exp. of General Office Clerks..	5,887.81	.01349	.07181
C85	General Office Supplies and Expenses..	585.98	.00134	.00715
C88	Pension Cost	35,547.23	.08145	.43354
C88B	Sick Leave	3,236.03	.00742	.03947
C88D	Sick Leave—Medical Fees	158.61	.00036	.00193
C89	Miscellaneous General Expenses.....	438.44	.00100	.00535
C92D	Compensation—Injuries and Damages, Employees	2,724.19	.00624	.03322
C93	Insurance	225.27	.00052	.00275
C94	Stationery and Printing.....	385.03	.00088	.00469
C94A	Tickets and Transfers.....	800.23	.00183	.00976
C95	Store Expenses	1,595.10	.00366	.01945
C96	Fuel and Servicing Auto Service Equip.	208.78	.00048	.00255
C98A	Use of Street Car Facilities.....	364.56	.00084	.00445
	Total—General and Miscellaneous	$53,108.19	.12169	.64772
	RECAPITULATION—CABLE CAR OPERATION ONLY			
IA	Accounts 1 to 11 Inclusive.....	$91,030.07	.20858	1.11023
IB	Accounts 13 to 28 Inclusive.....	5,745.56	.01316	.07008
I	Way and Structures—Total Accounts 1 to 28 Inclusive.....	96,775.63	.22174	1.18031
II	Equipment	46,578.66	.10673	.56809
III	Power	98,229.72	.22508	1.19804
IV	Conducting Transportation	300,268.11	.68802	3.66216
VI	General and Miscellaneous.....	53,108.19	.12169	.64772
	Total—Operating Expenses	$594,960.31	1.36326	7.25632

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	Depreciation Reserve	$19,424.16	.04451	.23690
	Provision for Accidents	76,900.95	.17620	.93791
	Total—Reserves	$96,325.11	.22071	1.17481
	Interest on Investment	$4,210.23	.00965	.05135
	Total Costs—Cable Street Cars	$695,495.65	1.59362	8.48248
	Cable Street Car Mileage 436,424			
	Cable Street Car Hours 81,992			
	MOTOR COACH OPERATION ONLY			
	I—WAY AND STRUCTURES			
B1	Superintendence & Engineering, M.C.	$14,274.64	.00121	.01242
B16	Crossings, Fences, and Signs	885.10	.00008	.00077
B18	Communication Systems—Repairs	4.81	.00000	.00000
B24D	Shops	11,393.47	.00097	.00992
B24E	General Offices	253.71	.00002	.00022
B24F	Stations, Waiting Rooms & Platforms	100.00	.00001	.00009
B24H	Miscellaneous Buildings & Structures	176.47	.00001	.00015
	Total—Way and Structures	$27,088.20	.00230	.02357
	II—EQUIPMENT			
B29	Superintendence of Equipment	$10,148.60	.00086	.00883
B30	Fare Boxes, M.C.	2,941.01	.00025	.00256
B36	Shop Equipment, Mach. & Tools, M.C.	6,647.64	.00057	.00579
B37	Shop Expenses, M.C.	10,531.55	.00090	.00916
B38	Maintenance of Automotive and Miscellaneous Equipment, M.C.	16,500.77	.00140	.01436
B39A	Motor Coach Engines	300,521.69	.02554	.26152
B39B	Painting Coaches	21,560.90	.00183	.01876
B39C	Axles, Wheels and Springs, Labor and Material, M.C.	57,311.10	.00487	.04987
B39D	Tires & Tubes Including Repairs, M.C.	160,099.41	.01360	.13932
B39E	Bodies, Labor and Material, M.C.	126,445.31	.01075	.11004
B39G	Motor Coach Transmissions Including Rear Axles	49,908.87	.00424	.04343
B39H	Brakes, Labor and Material, M.C.	66,851.91	.00568	.05818
B41	Store Expense, Clearing	*3,576.09*	*.00030*	*.00311*
B44.3	Dismantling Retired Equipment, M.C.	1,822.32	.00015	.00159
	Total Equipment	$827,714.99	.07034	.72030
	III—POWER			
B53	Gasoline and Diesel Fuel, M.C.	$617,809.81	.05250	.53764
B59A	Power Purchased for Light'g Carbarns	979.12	.00008	.00085
	Total—Power	$618,788.93	.05258	.53849

Italic figures denote loss and deficiency.

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	IV—CONDUCTING TRANSPORTATION			
B63	Superintendence of Transportation...	$380,441.17	.03233	.33107
B64	Coach Operators	1,870,920.14	.15899	1.62813
B67B	Lubricants and Waste.....	36,286.27	.00308	.03158
B67C	Special Agents and Fare Registers....	8,798.13	.00075	.00766
B67E	Cleaning Materials and Misc. Supplies	8,282.93	.00070	.00721
B69	Station Expenses	930.00	.00008	.00081
B70	Carhouse Employees: Cleaning, Washing, Greasing, Servicing.....	308,144.16	.02619	.26816
B71	Building Expenses and Services.....	7,998.38	.00068	.00696
B73	Operation of Telephone and Central Control System	29,808.50	00253	.02594
B78	Other Transportation Expenses.....	24,647.87	.00209	.02145
	Total—Conducting Transportation	$2,676,257.55	.22742	2.32897
	VI—GENERAL AND MISCELLANEOUS			
B83	Sal. and Exp. of General Officers.....	$25,558.67	.00217	.02224
B84	Sal. and Exp. of General Office Clerks.	158,609.09	.01348	.13803
B85	General Office Supplies and Expenses.	15,586.07	.00132	.01356
B88	Pension Cost	248,932.32	.02115	.21663
B88B	Sick Leave	42,863.84	.00364	.03730
B88D	Sick Leave—Medical Fees.....	1,112.77	.00010	.00097
B88E	Military Leave	308.00	.00003	.00027
B89	Miscellaneous General Expenses.....	11,880.47	.00101	.01034
B92D	Compensation—Injuries and Damages, Employees	19,134.39	.00163	.01665
B93	Insurance	7,103.74	.00060	.00618
B94	Stationery and Printing.....	10,399.95	.00088	.00905
B94A	Tickets and Transfers.....	21,435.94	.00182	.01866
B95	Store Expenses	43,055.96	.00366	.03747
B96	Fuel and Serv. Auto Serv. Equipment.	5,715.79	.00049	.00497
B98A	Use of Street Car Facilities.....	9,214.80	.00078	.00802
B98B	Rent of Motor Coaches.....	3,835.33	.00033	.00334
B98C	Motor Coach Use by Trolley Coach Line	*2,492.42*	*.00021*	*.00217*
	Total—General and Miscellaneous	$622,254.71	.05288	.54151
	RECAPITULATION—MOTOR COACH OPERATION ONLY			
I	Way and Structures	$27,088.20	.00230	.02357
II	Equipment	827,714.99	.07034	.72030
III	Power	618,788.93	.05258	.53849
IV	Conducting Transportation	2,676,257.55	.22742	2.32897
VI	General and Miscellaneous.....	622,254.71	.05288	.54151
	Total—Operating Expenses	$4,772,104.38	.40552	4.15284

Italic figures denote loss and deficiency.

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	Depreciation Reserve	$283,451.77	.02409	.24667
	Provision for Accidents	432,664.82	.03676	.37652
	Total—Reserves	$716,116.59	.06085	.62319
	Interest on Investment	8,143.88	.00069	.00709
	Total Costs—Motor Coaches	$5,496,364.85	.46706	4.78312
	Motor Coach Mileage	11,767,885		
	Motor Coach Hours	1,149,117		
	TROLLEY COACH OPERATION ONLY			
	I—WAY AND STRUCTURES			
T1	Superintendence and Engineering, T.C.	$1,613.27	.00121	.01124
T16	Crossings, Fences and Signs	394.72	.00029	.00275
T18	Communication Systems—Repairs	212.98	.00016	.00148
T22E	Overhead Trolleys	11,400.58	.00856	.07943
T24D	Shops	425.25	.00032	.00296
T24H	Miscellaneous Buildings & Structures	11.46	.00001	.00008
	Total—Way and Structures	$14,058.26	.01055	.09794
	II—EQUIPMENT			
T29	Superintendence of Equipment, T.C.	$1,150.83	.00086	.00802
T30	Misc. Equipment Repairs, T.C.	679.02	.00051	.00473
T30A	Painting—Coaches	1,309.64	.00098	.00912
T30B	Bodies, Labor and Material, T.C.	5,498.33	.00413	.03831
T30C	Axles, Wheels, and Springs, Labor and Material—Coaches	11,256.16	.00845	.07842
T30D	Tires & Tubes, Including Repairs, T.C.	22,968.50	.01725	.16002
T30E	Brakes, Labor and Material, T.C.	1,353.95	.00102	.00943
T33	Electric Equipment, Propulsion	6,731.40	.00505	.04690
T36	Shop Equipment, Machinery and Tools	402.17	.00030	.00280
T37	Shop Expenses	133.85	.00010	.00093
T38	Maintenance of Automotive and Miscellaneous Equipment	1,866.97	.00140	.01301
T41	Store Expense, Clearing, T.C.	*443.99*	*.00033*	*.00309*
	Total—Equipment	$52,906.83	.03972	.36860
	III—POWER			
T45	Superintendence of Power	$686.30	.00051	.00478
T52	Power Plant Employees	9,504.44	.00714	.06622
T59	Power Purchased for Operation	46,334.05	.03479	.32280
	Total—Power	$56,524.79	.04244	.39380

Italic figures denote loss and deficiency.

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	IV—CONDUCTING TRANSPORTATION			
T63	Superintendence of Transportation...	$43,091.68	.03235	.30021
T64	Coach Operators	222,335.30	.16692	1.54899
T66	Miscellaneous Car Service Employees.	664.40	.00050	.00463
T67B	Lubricants and Waste.....	464.30	.00035	.00323
T67C	Special Agents and Fare Registers....	996.26	.00075	.00694
T67D	Incandescent Lamps	80.73	.00006	.00056
T67E	Cleaning Materials and Misc. Supplies.	395.94	.00030	.00276
T69	Station Expenses	687.05	.00052	.00479
T70	Carhouse Employees: Cleaning, Washing, Greasing, Servicing.....	20,925.68	.01571	.14579
T71	Building Expenses and Services.....	15.71	.00001	.00011
T73	Operation of Telephone and Central Control System	3,370.41	.00253	.02348
T78	Other Transportation Expenses.....	220.41	.00016	.00154
	Total—Conducting Transportation	$293,247.87	.22016	2.04303
	VI—GENERAL AND MISCELLANEOUS			
T83	Sal. and Exp. of General Officers.....	$2,896.49	.00218	.02018
T84	Sal. and Exp. of General Office Clerks.	17,955.45	.01348	.12509
T85	General Office Supplies and Expenses.	1,779.98	.00134	.01240
T88	Pension Cost	31,117.08	.02336	.21679
T88B	Sick Leave	2,135.03	.00160	.01487
T88D	Sick Leave—Medical Fees	138.94	.00010	.00097
T89	Miscellaneous General Expenses.....	1,350.78	.00101	.00941
T92D	Compensation—Injuries and Damages, Employees	2,385.73	.00179	.01662
T93	Insurance	854.88	.00064	.00596
T94	Stationery and Printing...	1,183.70	.00089	.00825
T94A	Tickets and Transfers.....	2,435.66	.00183	.01697
T95	Store Expenses	4,868.58	.00366	.03392
T96	Fuel and Serv. Auto Service Equipment	643.15	.00048	.00448
T98A	Use of Street Car Facilities.....	1,077.36	.00081	.00751
T98C	Motor Coach Use by Trolley Coach Line	2,492.42	.00187	.01736
	Total—General and Miscellaneous	$73,315.23	.05504	.51078
	RECAPITULATION—TROLLEY COACH OPERATION ONLY			
I	Way and Structures.....	$14,058.26	.01055	.09794
II	Equipment	52,906.83	.03972	.36860
III	Power	56,524.79	.04244	.39380
IV	Conducting Transportation	293,247.87	.22016	2.04303
VI	General and Miscellaneous.....	73,315.23	.05504	.51078
	Total—Operating Expenses	$490,052.98	.36791	3.41415

Acct. No.	Name	Amount	Per Car Mile	Per Car Hour
	Depreciation Reserve	$40,185.27	.03017	.27997
	Provision for Accidents	63,960.13	.04802	.44560
	Total Reserves	$104,145.40	.07819	.72557
	Interest on Investment	$1,873.45	.00140	.01305
	Total Costs—Trolley Coaches	$596,071.83	.44750	4.15277

Trolley Coach Mileage.....1,331,994
Trolley Coach Hours..... 143,536

RECAPITULATION—SYSTEM
ELECTRIC AND CABLE STREET CARS AND MOTOR AND TROLLEY COACHES

	Amount	Per Coach or Car Mile	Per Coach or Car Hour
Operating Expense	$17,076,471.19	.58749	5.43227
Depreciation Reserve	1,087,841.45	.03743	.34606
Accident Reserve	1,361,856.30	.04685	.43323
Interest During Acquisition..... $64,725.99			
Bond Interest 30,727.50	95,453.49	.00328	.03036
Taxes	17,552.68	.00060	.00558
Total	$19,639,175.11	.67565	6.24750

Total Operating Expense—Electric and Cable Street Cars and Motor and Trolley Coaches.....$17,076,471.19
Total Electric and Cable Street Cars and Motor and Trolley Coach Mileage 29,066,859
Total Electric and Cable Street Car and Motor and Trolley Coach Hours 3,143,524
Total Expense per Electric and Cable Street Car and Motor and Trolley Coach Mile..... .58749
Total Expense per Electric and Cable Street Car and Motor and Trolley Coach Hour..... 5.43227

	Mileage	Hours
Electric Street Cars	15,530,556	1,768,879
Cable Street Cars	436,424	81,992
Trolley Coaches	1,331,994	143,536
Motor Coaches	11,767,885	1,149,117
Total	29,066,859	3,143,524

Gross Operating Revenue.....$18,321,581.91
Total Operating Expense..... 17,076,471.19
Ratio of Operating Expense to Gross Revenue..... .93

MUNICIPAL RAILWAY OF SAN FRANCISCO SINGLE TRACK ELECTRIC AND CABLE MILEAGE AND ROUND-TRIP MILES AND STREET TRAVERSED BY MOTOR AND TROLLEY COACHES

June 30, 1948

	Operated	Non-Operated	Total
MUNICIPAL RAILWAY DIVISION—ELECTRIC:			
Main Track	67.070	.....	.....
Sidings, Turnouts	0.221	.....	.....
Car Houses	3.973	.....	.....
Non-Operated Track	.....	7.644	.....
Total	71.264	7.644	78.908
MUNICIPAL RAILWAY DIVISION—ELECTRIC:			
(Former Market Street Railway Company track not included in purchase of September 29, 1944, due to prior franchise expirations)	2.070	3.977	.....
Total	2.070	3.977	6.047
Municipal Railway Division—Total	73.334	11.621	84.955
MARKET STREET EXTENSION DIVISION—ELECTRIC:			
Main Track—San Francisco County	105.139	.....	.....
Main Track—San Mateo County	27.664	.....	.....
Sidings and Turnouts—San Francisco County	16.001	.....	.....
Sidings and Turnouts—San Mateo County	0.396	.....	.....
Non-Operated Track—San Francisco County	.....	50.939	.....
Non-Operated Track—San Mateo County	.....	0.102	.....
Total	149.200	51.041	200.241
Total Single Track—Electric	222.534	62.662	285.196
MARKET STREET EXTENSION DIVISION—CABLE:			
Main Track	6.206	.....	.....
Car House and Shops	0.586	.....	.....
Non-Operated Track	.....	2.360	.....
Total Single Track—Cable	6.792	2.360	9.152
Total Single Track—Cable and Electric	229.326	65.022	294.348
Motor Coach Routes—Round-trip Miles of Street Traversed			339.80
Trolley Coach Routes—Round-trip Miles of Street Traversed			24.46
Total Coach Routes—Round-trip Miles of Street Traversed			364.26

MUNICIPAL RAILWAY OF SAN FRANCISCO
CHRONOLOGY

December 2, 1902.—Election. Proposition authorizing $700,000 bonds defeated.

October 8, 1903.—Election. Proposition authorizing $710,000 bonds defeated.

November 6, 1903.—Franchise of Geary Street, Park and Ocean Railroad Company expired.

June, 1906.—Budget appropriation $325,000 for Geary Street Railroad. Used for reconstruction and rehabilitation of streets and buildings destroyed in disaster of April 18-22, 1906.

June, 1907.—Budget appropriation $720,000 for Geary Street Railroad. Subsequently declared invalid by court.

June 24, 1909.—Election. Proposition authorizing $1,950,000 bonds defeated, lacking 203 votes.

December 30, 1909.—Election. Proposition authorizing $2,020,000 bonds carried by 20,000 majority.

April 16, 1910.—Superior Court declares bond issue valid in every respect. Decision affirmed by Supreme Court in July, 1910.

July 18, 1910.—First lot of bonds, $121,000 sold.

Summer, 1911.—Construction of Geary Street Railroad commenced.

May 5, 1912.—The Geary Street, Park and Ocean Railroad (cable system) ceased operations.

December 28, 1912.—The Municipal Railway (overhead trolley system) commenced operation on Geary Street from Kearny Street to Thirty-third Avenue and Park, with ten (10) cars, under direction of Thomas A. Cashin, Superintendent, Mayor James Rolph, Jr., acting as motorman on first car.

April 22, 1913.—Referendum election. Agreement with Sutter Street Railroad Company respecting use of tracks on lower Market Street ratified.

June 25, 1913.—Municipal Railway in full operation from Ferries to Beach and Park. Forty-three cars owned.

August 26, 1913.—Election. Proposition authorizing $3,500,000 bonds for extensions of Municipal Railway carried by 37,670 majority.

December 11, 1913.—Presidio and Ferries R. R. Company (Union Street Division) taken over by Municipal Railway.

May 16, 1914.—Masonic Avenue branch completed.

August 15, 1914.—Van Ness Avenue line from Market Street in operation to Exposition grounds.

September 7, 1914.—Potrero Avenue line in operation, Eleventh and Market Streets to Twenty-fifth Street and Potrero Avenue.

December 29, 1914.—Stockton Street, Columbus Avenue and North Point line in operation through tunnel.

December 29, 1914.—Fort Mason Loop commenced operation.

February 10, 1915.—Columbus Avenue line in operation from Ferries to Exposition grounds.

February 19, 1915.—California Street line in operation to Thirteenth Avenue.

March 28, 1915.—California Street line in operation to Thirty-third Avenue.

April 25, 1915.—Beach loop, Geary Street line, commenced operation.

January 24, 1916.—Stockton Street branch ("E") in operation from Presidio to Market, Fourth and Ellis Streets.

April 29, 1916.—Church Street line (Sect. "C"), Sixteenth to Eighteenth and Twenty-second to Thirtieth Streets, ready for operation.

June 1, 1916.—Columbus Avenue ("J" line), Ferries to Exposition grounds discontinued.

June 12, 1916.—Church Street line (Sect. "A"), Van Ness Avenue and Market Street to Sixteenth and Church Streets, started by day labor. Held up by United Railroads injunction.

June 28, 1916.—Church Street line (Sect. "B"), Eighteenth to Twenty-second Streets, ready for operation.

December 21, 1916.—Potrero Avenue line ("H") extended from Twenty-fifth Street to Army Street. Twenty-two hundredths mile added. Placed in operation January 19, 1917.

August 11, 1917.—Church Street line ("J"), Van Ness Avenue and Market Street to Church and Thirtieth Streets, commenced operation.

February 3, 1918.—Twin Peaks tunnel line ("K") to Van Ness Avenue and Bush Street commenced operation. (Length of tunnel 11,920 feet.)

May 4, 1918.—Greenwich Street extension (Van Ness Avenue line), Scott to Baker Street, commenced operation.

June 1, 1918.—Market Street lines ("J" and "K"), Van Ness Avenue to Geary Street, commenced operation, establishing through service, Ferries to Sloat Boulevard.

October 30, 1918.—Third loop opened at Ferry terminus.

February 21, 1919.—Market Street line ("K") commenced operation over United Railroads' tracks on Ocean Avenue to Miramar Avenue.

April 12, 1919.—Taraval Street line ("L") commenced operation from West Portal of Twin Peaks tunnel to Thirty-third Avenue, operating co-jointly with the United Railroads on Taraval Street between Twentieth Avenue and Thirty-third Avenue.

May 18, 1919.—Market Street line ("K") commenced operation over extension along Ocean and Brighton Avenues to Grafton Avenue.

July 22, 1919.—Changed and shortened route of Van Ness Avenue line ("D") and Union Street line ("E") by track connection on Union Street between Franklin Street and Van Ness Avenue.

August 7, 1919.—One elevator placed in operation at Forest Hill station of Twin Peaks tunnel.

December 8, 1919.—Presidio loop, Van Ness Avenue and Union Street lines, commenced operation.

January 14, 1923.—Taraval Street line ("L") commenced operation over extension on Taraval Street, between Thirty-third Avenue and Ocean Beach.

October 15, 1923.—Taraval Street line ("L") operated as a through line from Beach to Ferries via Twin Peaks tunnel and Market Street.

October 6, 1925.—Line "M" commenced operation between Plymouth Avenue and Broad Street to St. Francis Circle.

February 1, 1928.—Second elevator (the largest on the Pacific Coast) installed at Forest Hill station of Twin Peaks tunnel.

October 21, 1928.—Line "N" commenced operation between Forty-eighth Avenue and Judah Street and the Ferries.

January 8, 1932.—Jurisdiction over the San Francisco Municipal Railway was transferred from the Board of Public Works to the San Francisco Public Utilities Commission under provisions of the new charter.

June 1, 1932.—Line "O" commenced operation between Van Ness Avenue and Market Street and the Presidio (a rearrangement of lines "D," "E," and "H").

July 15, 1932.—Line "O" abandoned and lines "D," "E," and "H" placed on their original routing.

December 5, 1932.—Line "A" discontinued.

December 5, 1932.—Bus Route No. 1 extended to Tenth Avenue and Lake Street.

January 3, 1933.—Bus Route No. 2 discontinued.

January 30, 1933.—Bus Route No. 1 North Terminal changed to Tenth Avenue and California Street.

December 5, 1933.—Bus Route No. 1 South Terminal changed to Edna Street and Monterey Boulevard.

July 28, 1935.—Bus Route No. 6 commenced operation. Eureka Valley Station to Diamond and Clipper Streets.

September 15, 1937.—Line "L" extension to Fleishhacker Pool commenced operation.

January 1, 1938.—Bus Route No. 5 Marina Route routed over Broderick Street instead of Divisadero Street.

May 8, 1938.—Bus Route No. 6 South Terminal changed to Diamond and Duncan Street.

January 15, 1939.—Bay Bridge trains started operation to Bridge Terminal. Alternate Municipal Railway cars operated over Bay Bridge loop.

June 25, 1939.—Bus Route No. 6 rerouted over Castro, Nineteenth, Eureka, Twenty-third, Diamond, Clipper, Church, Twenty-fifth, Collingwood, and Market Streets.

July 9, 1939.—Bus Route No. 8 commenced operation from Judah Street and Seventeenth Avenue to Taraval Street and Fifteenth Avenue.

July 23, 1939.—Bus Route No. 7 commenced operation from Forest Hill Station to Rio Court.

July 30, 1939.—Bus Route No. 11 commenced operation from Union and Powell Streets to Coit Tower, Telegraph Hill.

August 6, 1939.—Bus Route No. 9 commenced operation from Potrero Avenue and Army Street to Bacon and Somerset Streets.

August 6, 1939.—Bus Route No. 10 commenced operation from Balboa Terrace to San Jose Avenue and Plymouth Avenue.

August 6, 1939.—Car line "M" discontinued and replaced by Bus Route No. 10.

August 24, 1939.—Bus Route No. 10 Northern Terminal extended from Balboa Terrace to St. Francis Circle.

October 14, 1939.—Bus Route No. 6 Southern Terminal extended to South Van Ness Avenue and Twenty-third Street.

October 15, 1939.—Bus Route No. 10 Southern Terminal extended to Sickles Avenue and Mission Street.

October 30, 1939.—Bus Route No. 9 Southern Terminal extended to San Bruno Avenue and Ware Street.

December 27, 1939.—Five new modern stream-lined passenger cars were placed in service.

July 2, 1940.—Bus Route No. 12 commenced operation from Beale and Howard Streets to Army Street and South Van Ness Avenue.

July 7, 1940.—Bus Route No. 12 Eastern Terminal extended from Beale and Howard Streets to Market Street and the Embarcadero.

November 18, 1940.—Bus Route No. 1 extended to San Francisco Junior College on school days.

January 1, 1941.—Lines "B," "D," "K," and "N" Eastern Terminal changed to Bridge Terminal and lines "C," "J," and "L" Eastern Terminal changed to Ferry Terminal from alternate cars of each line to Bridge and Ferry Terminals.

March 23, 1941.—Bus Route No. 2 commenced operation from Twenty-second Avenue and Irving Street to Thirty-fifth Avenue and Noriega Street.

March 23, 1941. Bus Route No. 3 commenced operation from Thirtieth and Church Streets to Sickles and Huron Avenues.

March 23, 1941.—Bus Route No. 8 discontinued.

March 23, 1941.—Bus Route No. 10 Northern Terminal extended from St Francis Circle to Nineteenth Avenue and Irving Street.

April 6, 1941.—Bus Route No. 14 commenced operation from Noe Street and Duboce Avenue to Haight and Belvedere Streets.

May 5, 1941.—Bus Route No. 3 changed from Church Street, Day Street, and Dolores Street to Thirtieth Street, Sanchez Street and Randall Street.

May 19, 1941.—Bus Route No. 14 Eastern Terminal changed from Noe Street and Duboce Avenue to Church and Market Streets.

June 8, 1941.—Bus Route No. 7 Southern Terminal changed from Rio Court to Teresita Boulevard and Melrose Avenue.

September 7, 1941.—Line "R" commenced operation with trolley coaches from Army Street and South Van Ness Avenue to Beale and Howard Streets.

September 7, 1941.—Bus Route No. 12 discontinued between Army Street and Beale Street.

September 8, 1941.—Bus Route No. 12 operated as a shuttle service from line "R" between Beale and Howard Streets and Market Street and the Embarcadero.

September 29, 1941.—Bus Route No. 14 changed between Seventeenth and Ashbury Streets and Cole and Carl Streets.

December 8, 1941.—Bus Route No. 10 extended to Twenty-fifth Avenue and California Street.

January 4, 1942.—Bus Route No. 10 consolidated with Bus Route No. 3. Bus Route No. 10 discontinued.

January 4, 1942.—Bus Route No. 12 (shuttle) discontinued.

March 16, 1942.—Ferry Terminal outside loop discontinued.

April 12, 1942.—Bus Route No. 3 extended to Sea Cliff Avenue.

May, 1942.—Outside loop at Ferry removed.

June 10, 1942.—Bay Bridge Terminal—middle loop and switch tower discontinued.

July, 1942.—Present outside loop at Ferry connected to tracks of Embarcadero North Terminal.

December 1, 1942.—Mutual interchange of transfers in effect with all lines of the California Street Cable Railroad Company.

February 10, 1943.—Bus Route No. 6 changed between Diamond and Duncan Streets and Castro and Twenty-fifth Streets.

August 8, 1943. Mutual interchange of transfers with the California Cable Railroad Company which went into effect December 1, 1942, was discontinued.

May 16, 1944.—Primary and Special Election. Purchase of operative properties of the Market Street Railway by payment of $2,000,000 in cash and $5,500,000 from earnings of acquired Market Street Railway properties. Approved. For—108,621; Against—84,078; a majority of 24,543.

A summary of other elections which failed of passage from November 3, 1925, to April 20, 1943, for purchase of the Market Street Railway Company properties and for Municipal Railway expansion follows:

November 3, 1925.—General Municipal Election. Initiative measure for bond issue of $36,000,000 for purchase of Market Street Railway Company's properties. Not approved. For—12,435; Against—87,315.

June 14, 1927.—Special Election for bond issue of $4,700,000 for extensions to the Municipal Railway. Not approved. For—44,412; Against—25,791.

November 7, 1933.—General and Special Election for bond issue of $63,000 for extension of line from Taraval Street and Forty-sixth Avenue. Not approved. For—76,438; Against—68,330.

November 2, 1937.—General Election for bond issue for $49,250,000 for constructing subways and acquiring a Rapid Transit System. Not approved. For—68,834; Against—95,246.

September 27, 1938.—Special Election—Proposition No. 8—Bond issue of $24,480,000 to purchase operating properties of the Market Street Railway Company. Not approved. For—52,680; Against—93,979.

November 8, 1938.—General Election. Declaration of policy—Proposition No. 4—Purchase of Market Street Railway Company operating property for an amount not exceeding $5,000,000. Not approved. For—49,932; Against—128,320.

Proposition No. 5.—Declaration of policy.—City to issue $9,000,000 bonds for passenger buses and facilities therefor to be used with property of the Market Street Railway Company if acquired or as adjunct of Municipal Railway. Not approved. For—49,948; Against—128,466.

November 3, 1942.—General Election. Acquisition of operative properties of Market Street Railway Company financed by issuance of revenue bonds in amount $7,950,000. Not approved. For—96,003; Against—102,081.

April 20, 1943.—Special Election. Purchase of operative properties of Market Street Railway Company for $7,950,000 to be financed by issuance of revenue bonds. Not approved. For—53,619; Against—88,418.

September 29, 1944.—At 5:00 a.m. on this date, the operative properties of the Market Street Railway Company system were merged with those of the Municipal Railway system and were operated as a consolidated system.

October 15, 1944.—Free interchange of transfers in effect with lines of the California Street Cable Railroad; fare on that company's lines increased to 7 cents.

December 11, 1944.—Contract was awarded for the removal of the outer tracks and the replacement of the inner tracks on Market Street, Valencia Street to Castro Street. Work was performed under Municipal Railway contract No. 192—replacement job No. 1410, and was completed October 25, 1945.

December 17, 1944.—Line "M" (Ocean View) reestablished operation which had been discontinued on August 6, 1939.

January 7, 1945.—All motor coach operations, including maintenance, repairs, housing, and dispatching, centralized at the 24th and Utah Streets garage, and garage at 3708 Geary Boulevard discontinued.

August 15, 1945.—Gasoline rationing ended.

December 30, 1945.—Tire rationing ended.

May 20, 1946. Fare rate increased from 7 cents cash or token to 10 cents cash or $8\frac{1}{3}$ cents token rate.

June 30, 1946 to July 3, 1946, inclusive.—No operation for four days on account of strike conditions.

October 6, 1946.—Sunset Express motor coach service commenced with extension of route No. 2 to Golden Gate Avenue and Taylor Street. Express service from Nineteenth Avenue to Van Ness Avenue.

November, 1946.—Inner tracks on Church Street, Market to Seventeenth Street and Twenty-fifth to Twenty-seventh Street replaced. Outer tracks Market Street to Sixteenth Street removed. Work performed under replacement Job No. 1607.

November 5, 1946.—General election. Charter amendment approved amending section 151.3 fixing average of two highest wage schedules in other street railways in effect July 1 of each year as rate for Municipal Railway. Vote: Yes—181,059; No—55,557.

December 8, 1946.—Haight Street car house abandoned.

January 6, 1947.—Centrol control with radio station KCRJ inaugurated at the Geary Street car house.

January 9, 1947.—First three of forty electrical headway recorders in operation in Central Control. Total of twenty in operation on June 30, 1947.

March 10, 1947.—Land for new motor coach garage in block bounded by Beach, Stockton, North Point, and Powell Streets purchased at cost of $183,400.

May 20, 1947.—Inner tracks on Market Street from Fremont Street to Eddy Street replaced under replacement job No. 1646M—contract No. 253.

June 9, 1947.—Street car service discontinued on line "E." Replaced by trolley coaches from Pierce and Union Streets to Beale and Howard Streets and by motor coaches from Pierce to Lyon Street.

July 20, 1947.—Complete conversion of street car line "E" to trolley coach operation and consolidation with trolley coach line "R." Operation from Lyon and Greenwich Streets to Army and South Van Ness Avenue.

November 4, 1947.—General election. General Obligation bonds voted—$20,000,000. Municipal Railway Rehabilitation bonds, Yes—181,047, No—53,751. $2,200,000 Market Street Railway Debt Retirement bonds, Yes—173,812, No—57,486. $22,850,000 Street Reconstruction, Traffic Signals, and Track Removal bonds, Yes—181,599, No—49,932. $5,000,000 Parking Facility bonds, Yes—162,821, No—66,950. All approved by approximately three to one margin.

November 4, 1947.—General election. Charter amendment making mandatory retention of present and existing municipally owned cable car system approved. Yes—169,464, No—51,107.

November 4, 1947.—General election. Charter amendment allowing payment of the debt to the Market Street Railway Company out of the proceeds of the $2,200,000 bond issue approved. Yes—168,311, No—56,576.

June 1, 1948.—Primary election. Bond issue in amount of $200,000 for purchase of the California Street Cable Railroad Company was defeated as the issue did not receive the necessary two-thirds vote of the electors. Vote: Yes—131,689, No—92,265.

June 7, 1948.—McAllister Street car house converted to motor coach terminal.

June 7, 1948.—The No. 5 McAllister and the No. 21 Hayes Street car lines were replaced by motor coaches.

June 7, 1948.—Construction of inner tracks on Market Street from Eddy Street to Valencia Street complete and outer tracks on Market Street abandoned.

July 4, 1948.—The No. 6 Haight-Masonic and the No. 7 Haight-Ocean street-car lines were converted to motor coach operation.

August 1, 1948.—The No. 22 Fillmore, the No. 25 Bryant-San Bruno, and the No. 4 Sutter-Sacramento street car lines were wholly coverted to motor coach operation, and the No. 3 Sutter-Jackson was partially converted to motor coach operation.

August 1, 1948.—Fillmore Street car house closed.

August 1, 1948.—Ocean bus yard opened as a motor coach terminal.

July 1, 1947 to June 30, 1948.—Changes in car lines and coach routes. See complete statement of all changes of car lines and coach routes made during the fiscal year ended June 30, 1948, following section of the report captioned "Transportation and Schedule Departments."

SINGLE TRACK MILEAGE AND ROUND TRIP MILES OF STREETS TRAVERSED BY MOTOR AND TROLLEY COACHES

June 30, 1948

Owned and Operated (Including spurs, turnouts, sidings, and car house tracks)	
Electric Street Car	222.534
Cable Car	6.792
Total Operated Track	229.326
Owned—Non-Operated	
Electric Street Car	62.662
Cable Car	2.360
Total Non-Operated Track	65.022
Total—Single Track Owned	294.348
Motor Coach Routes	
Round Trip Miles of Street Traversed	339.800
Trolley Coach Routes	
Round Trip Miles of Street Traversed	24.460
Total Coach Routes—Round Trip Miles of Street Traversed	364.260
Tunnels	
Length of Twin Peaks Tunnel (Bore only, not including approaches)	11,654.00 feet
Length of Twin Peaks Tunnel (Including approaches)	11,925.00 feet
Length of Duboce Tunnel	4,231.37 feet
Length of Duboce Tunnel (Including approaches)	4,641.73 feet
Length of Stockton Street Tunnel (From portal to portal)	910.06 feet